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ABSTRACT

Three conferences on educational innovation raised basic questions concerning goals and values for junior college students. Speakers addressed each of the conferences on problems encountered in their respective areas of humanities, social sciences, and physical sciences. The addresses are presented, along with recommendations made by the conference participants. Suggestions stemming from the humanities conference include expansion of subject matter to include non-Western cultures, interdepartmental courses, team teaching, and field trips. Participants in the conference on social sciences discussed (1) possibilities for eliminating punitive aspects of grading systems, such as flunking courses; (2) alternatives to traditional course requirements such as writing papers; (3) supplements to traditional classroom materials such as outside presentations and seminars; and (4) possibilities for independent studies. Recommendations resulting from the conference on physical sciences stressed use of video-tapes and closed-circuit television, flexibility in laboratory use, and the creation of a new grading system. (RC)

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MINNESOTA JUNIOR COLLEGE FACULTY
1969 CONFERENCES

Reports and Papers from

THREE CONFERENCES ON INNOVATION

I Librarians and Instructors in the Humanities
  Nolte Center for Continuing Education, University of Minnesota — February 9, 10, 11

II Counselors and Instructors in the Social Sciences
  Pick-Nicollet Hotel, Minneapolis — March 9, 10, 11

III Instructors in Natural Science, Mathematics, and Occupational Education
  Nolte Center for Continuing Education, University of Minnesota — April 13, 14, 15

Edited by
Norman W. Moen and James P. Shaner

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Department of Conferences and Institutes
Nolte Center for Continuing Education
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University of Minnesota,
Minneapolis, Minnesota 55455

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UNIVERSITY OF CALIF.
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INFORMATION

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FOREWORD

Three years ago, the Louis W. and Maud Hill Family Foundation of St. Paul granted funds enabling representatives of the faculties of all private and public junior colleges in Minnesota to meet over a period of two years in a series of six two-day conferences. Held under the auspices of the General College, the College of Education and the General Extension Division of the University of Minnesota, the conferences were intended to foster professional and institutional relationships, facilitate exchange of information and points of view identify major issues, and bring national figures in junior college education before Minnesota faculty audiences.

General guidance for the project was provided by an advisory committee chaired by Dr. Philip C. Helland, Chancellor of the Minnesota State Junior College System. The president and immediate past president of the Minnesota Junior College Faculty Association were among the committee members. Each of the conferences had a separate program planning committee composed largely of state junior college faculty personnel.

The conferences are history now. All of the public and four of the private junior colleges were represented at almost every session. A total of 409 instructors and administrators listened to seventeen speakers, met at breakfast, lunch, or dinner, and participated in hours of formal and informal discussion. Records of the 1968 conferences have been published and distributed. Those of 1969 are presented here.

The three conferences held in 1968 were intended to provide maximum opportunity for unstructured discussion of the mission of the junior college, the characteristics of junior college students, and general matters relating to curriculum and instruction. In response to suggestions advanced by participants in evaluation questionnaires, the 1969 conferences featured schedules offering more workshops and formal presentations, and discussion directed toward more specific topics than had been planned the year before.

Considerations of space and money limit the published records of the 1969 conferences to summaries of the discussions and full texts of only four of the addresses. The editors are grateful indeed to the recorders who provided the materials which are presented here.

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INNOVATION

CONFERENCE I

Librarians and Instructors in Humanities

FEBRUARY 9-11, 1969
Nolte Center for Continuing Education

PLANNING COMMITTEE

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PROMISES TO KEEP
Dr. William H. Halvorson

Associate Dean, University College, Ohio State University; director of developmental and experimental courses for freshmen and sophomores; author; recipient of an American Council on Education fellowship in academic administration.

I begin my remarks with three assumptions. I assume first that all of us in this room share a common love for the humanities, a belief that there is a place for beauty in this computerized world, and a conviction that literature and music and philosophy and drama and the arts occupy a vital place in the life of every age. Secondly, I assume we all know that the ways we teach the humanities must change if we are to convey our convictions about the humanities to our students. And third, I think we share something very precious in higher education today – genuine concern for freshmen and sophomore students. We do such a pitiful job with freshmen and sophomores at my institution, at the University of Minnesota, at your institutions. Last week a sophomore, greatly excited and pleased, told me that after a year and a half of instruction by graduate students, he found himself for the first time in a class taught by a professor. He may regret the change, but the point is that if we are not putting at least a portion of what we consider to be our best teaching talent into freshmen and sophomore classes, then we do not believe in the value of educating freshmen and sophomores.

This is an opportune time to consider the topic of innovation in the humanities. Those of us who love the humanities have a problem on our hands. The humanities are playing a diminishing role in higher education. Proportionately, fewer students are taking their majors in the humanities today than used to be the case. At the turn of the century, for example, approximately 30% of the students attending colleges and universities were majoring in one or another of the humanities. About a decade ago, the figure was 13.5%, and today it has fallen to approximately 11%. The number of doctorates awarded in the humanities also is diminishing. During the period between 1938 and 1947, 18% of the doctorates awarded in America was in the humanities. Today, the figure has declined to 13%. From 1936 to 1945, sixty-five institutions sent five or more graduates to Ph.D. work in foreign languages and literature. Only forty institutions could make that claim ten years later. Similar numbers can be quoted in each area of the humanities.

There is subjective as well as statistical support of the proposition that the humanities are experiencing a decline. Humanists seem to me to have lost vitality and enthusiam. It is as though we have been intimidated by the magnitude of the concrete achievements in other disciplines. We sometimes give the impression of feeling trapped in the humanities, resentfully wishing we could do things over again and make a different choice of field. I am really appalled at the disillusionment I witness among some of the graduate students I talk with. Many of those in English and philosophy, for example, convey the impression they are bored with what they are doing.

We are all terribly aware of another dimension of the problem. Increasingly greater numbers of students are entering our colleges, many of them without having had much opportunity to learn about such subjects as art, literature, music, or philosophy. They are academic immigrants; first generation college students. Not long ago I was talking to 400 freshmen on one of the regional campuses of Ohio State University. When I asked how many of those present were sons or daughters of parents who had no opportunity to attend college, not less than 90% raised their hands. Where this is true, the faculty may be dealing with a great many students who never have heard a concert, never visited an art gallery, never witnessed a dramatic production other than the senior class play.

These are reasons why I think collegiate instruction in the humanities is in a state of uncertainty or even of crisis. These are reasons, too, why I think it appropriate that this conference should be concerned about innovations, change, in our humanities programs. But how can change be brought about? What kind of change is it reasonable for us to contemplate? Let me suggest three prerequisities for change; three conditions without which desirable change is not likely to occur.

There will be much talk at this conference about procedures and techniques. But change, I am convinced, must begin at a more basic level. We must ask ourselves: do we really and truly believe in the value of the humanities for our students and for society? When the great patron saint of the humanities, Socrates, was compelled to defend his life and work before the court at Athens, he said something like this: "I suppose it may have occurred to some of you that you might offer to spare my life if I were to promise to cease doing what I have been doing, perhaps to leave Athens and to live a different life. If you were to offer me life on that basis, I would love and honor you but so long as I have breath I will never cease teaching philosophy For philosophy is my life; for me there is no other life to desire."

Do you really believe in the humanities? Are you really convinced of the value of what you are doing? Only if you are convinced that the lives of your students will truly be enriched by literature, drama, philosophy, theology, or whatever your field may be, only then will the kind of change you seek to bring about be worth bringing about. That is the first prerequisite to change.

The second prerequisite is to be able to answer in the affirmative the question: are you really willing to change? If you are not willing, then your proposals will be trivial. I know full well that security lies in doing the things one is accustomed to doing. There is tremendous security in standing up and giving a lecture. Students find security in writing down the tremendously wise things we have to say Trying to do something different can lead to anxiety for both student and teacher. But if we are unwilling to risk security, we will be unable to work fruitful change.

The third prerequisite is money. Although I may be betraying my profession as an academic administrator, I am going to tell you a secret. What administrators believe in, they pay for. What they don't believe in they try to take out of faculty hide. The dean *says,* "That's a marvelous idea, but you'll have to do it on your own." What he *means* is that it is a crummy idea, but he's confident you aren't going to do anything about it anyway.

There will be no significant change unless money is forthcoming. Like any successful business, we must budget for research and development. To have faculty spending summer months meticulously planning new and better and more effectively taught courses requires money. To visit other institutions, to consult other teachers about their ideas and experiences, requires money. For you to come together at this conference to talk about change requires money, as the Hill Family Foundation has learned. And if you really believe in change in the humanities, you must bring pressure to bear upon the people who make money decisions – deans and presidents and chancellors – to have a portion of the institutional dollar budget committed to innovations and experiments.

What kinds of things can we do, given commitment, willingness to change, and money? First, we can seek new ways of teaching old courses. I have administrative responsibility for the experimental teaching program at Ohio State. The program was established as a way of identifying and subsidizing members of the faculty having ideas about experiments which appear to be worth trying. An experiment is defined in terms of three criteria. First, an experimental course is an attempt to test a pedagogical hypothesis. Second, an experimental course involves instructional arrangements differing significantly from those used in a course designated as a standard of comparison. Third, an experimental course is capable of being evaluated in order to provide a basis for deciding whether or not the pedagogical hypothesis is sound.

In this latter connection, we believe that the degree of precision required obviously depends upon the nature of the experiment. We try to avoid those parodies of educational research which are replete with apparatus and statistics, but which add up to a fat zero. However, we do insist that the person launching the experiment decide in advance the basis on which he will determine the validity of his hypothesis. The least he could do, for example, would be to compare the performance of his students in the experimental course with that of students in traditional courses in the same subject-matter field.

We are willing to consider three different kinds of pedagogical hypotheses. Number one, we are interested in what might be called a no-cost learning increment hypothesis. By this we mean an experiment designed to enhance student learning by altering classroom procedures with no increase in costs.

Let me give you some examples of this kind of experiment. Antioch College, where experimentation is a way of life, is a few miles from Columbus at Yellow Springs ,Ohio. The faculty in romance languages there recently completed an experiment in teaching French language and literature. Formerly, their students met in classes enrolling twenty. A member of the faculty worked intensively with these twenty, spending about six hours a week in the classroom and additional hours in the language laboratory. The experiment was designed to make more efficient use of teaching talent and to give students more class and supervised study time. The plan involved classes of sixty, meeting three hours a week for work under a professor and an additional eight hours a week under an advanced student in French. Thus, beginners had more class contact hours, professors gained time to work with advanced students, and costs remained the same. They discovered that the students experienced more satisfaction studying the language under these circumstances than when they were on their own for a greater proportion of the time. The students learned more, and they experienced more satistaction in learning what they learned.

A second kind of experiment involves what I call a low cost learning increment hypothesis. You would be on pretty good ground, for example, if you could demonstrate that by increasing the cost of teaching by five percent, you could increase learning outcome by fifteen or twenty percent.

The best example of this kind of experiment at Ohio State took place in the department of mathematics. Math 101, the lowest level course in the department, used to be infamous. Taught by graduate students, the course was a battle and the field was littered with the slain. Unhappy and guilt-ridden the department finally obtained funds to install closed-circuit television. Its finest teacher conducted classes three or four hours a week by means of TV. The graduate students supervised study periods. Evaluation showed that the casualty rate was declining. The low cost learning increment hypothesis was validated.

Another experiment involving this kind of hypothesis entailed establishment of a learning center in Ohio State's College of Arts and Sciences. Ohio State University has some forty-two thousand students on a sprawling campus. Courses in music and foreign languages require listening to tapes, but access to these teaching aids is complicated by geography and numbers. The learning center established a few years ago really is a sophisticated listening service. Students in dormitories, libraries, some of the Greek houses, and at various stations on campus can dial a two-digit number and request an audio- or video-tape (in some cases) presenting material currently being discussed in the classroom. The center cost money, but the educational gains proved sufficiently important to justify the expenditure.

A third kind of experiment is based upon what we call a no-loss-efficiency learning increment; reducing cost per student without decreasing student learning. Here the objective would be to make more effective use of system, facility, or faculty while achieving equal or enhanced learning.

But the experimental teaching program at Ohio State is not concerned exclusively with costs and tightly controlled experiments. We also are interested in proposals submitted by faculty members trying to conceptualize and develop new courses. We simply try to find ways to make more students fall in love with the subject fields to which we ourselves are wedded. The limits are determined only by the stretch of faculty imagination.

Here are a few examples or this kind of innovation. Recently, I encountered an exciting literature course titled, "The Hero in Jail." The course reading list included such items as Socrates, *Confessions of Nat Turner, Darkness at Noon,* and the *Autobiography of Malcolm X.* The purpose was to snare the student who wouldn't be caught dead reading novels or essays. The course was a success. The students weren't reading novels or essays *per se,* they were exploring a theme which interested them.

A few years ago, the curriculum at the Hayward California State College included a course called, "The American Dream." It is an interdisciplinary course combining literature and social science, and presenting Edward Albee, *The American Dream;* Arthur Miller, *Death of a Salesman;* James Baldwin, *The Fire Next Time,* and other fascinating works.

A course called "The Problem of Human Freedom" presents a theme which could entice students to read magnificant materials relating to such subtopics as "Freedom and Fate" (Greek tragedy); "Freedom and Grace" (Saint Augustine, Saint Thomas, Luther, Erasmus, John Calvin); "Freedom and Responsibility" (Aristotle, Kant, Mill, Campbell). To work out a theme like this could lead to abandoning stultified disciplinary pigeon holes and capturing the minds and imaginations of students.

Plans to establish interdisciplinary, interdepartmental courses frequently founder on reefs marked budget and faculty. But if you can find a teacher of literature and a historian willing to get at the ethos of a certain time period, an exciting course can result. Imagine, for example, offering a class in "The Athens of Pericles," and dealing with Greek literature, art, history, philosophy, and music during that period! Such possibilities must be explored if present-day students are to love and cherish the great achievements of mankind.

Another way to innovate in the humanities and to integrate student learning is to correlate courses. Interdisciplinary courses can be difficult to design and develop. In correlated courses, one professor might teach history and another might teach literature, but the curriculum is arranged in such a way that a number of students will take both courses. An administrator then can encourage the professors to coordinate their respective syllabi with the result that they reinforce one another in their teaching. Thus, the student taking 18th century English history also registers for 18th century English literature. The resulting coordination or reinforcement constitutes a species of educational or curricular dividend.

Those of us interested in innovation in the humanities need to be in touch with one another. And we need to know what is going on. I would like to call your attention to a new and promising venture called *Change*. This journal has just been launched by the Union for Research and Experimentation in Higher Education – a group of colleges interested in curricular relevance. Its editorial offices are at 59 East 54th Street, New York 10022. Its aim is to serve as a national clearing house for educational innovation. Antioch College issues *Antioch Notes*, occasional pamphlets issued without cost which report pedagogical experiments that worked, and sometimes those that failed – a rare kind of honesty in academia.

When you saw my title, "Promises to Keep," you may well have expected a disquisition on Robert Frost. But as you now know, I am concerned at this conference not with Frost, but with the promise implicit in the humanities. The promise that the *whole* of human life includes the wealth and color and sustaining nobility of art and music and philosophy and letters as well as sleeping and eating and working and worrying. We who profess the humanities are the bearers of that promise. What is more, we are confronted in our classrooms with a kind of implicit pledge that the lives of our students will be enriched by what we have to impart. For the sake of those students, for the sake of a society in danger of losing its human qualities, I implore you to keep that promise to the best of your human ability.

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DISCUSSION GROUPS:

I Using Community Resources in Instruction in the Humanities

Gordon L. Danuser
Rochester State Junior College, Leader

Susan Butler
Vermilion State Junior College, Recorder

Marjorie Russell
Education Department and Director of Tours
Minneapolis Institute of Art, Resource Person

II Non-Western Materials in Junior College Humanities Courses

Herbert Kjos
Lakewood State Junior College, Leader

Vickie Helweg
Metropolitan State Junior College, Recorder

Mary L. Wyvell, Associate Professor of Literature and Writing
General College, University of Minnesota, Resource Person

III Achieving Interdepartmental Cooperation in Humanities Courses

Lucille Johnsen
Normandale State Junior College, Leader

Arthur Maud
Metropolitan State Junior College, Recorder

Louis T. Safer, Professor and Head, Division of General Arts
General College, University of Minnesota, Resource Person

IV Planning Fine Arts Centers for Junior Colleges

Jean E. Swanson
North Hennepin State Junior College, Leader

Richard M. Bisbee
Worthington State Junior College, Recorder

Curtis Green, Architect
Hammel, Green and Abrahamson, Inc., Resource Person

V Ways the Humanities Teacher Seeks to Reach the Marginal Student

Beverly Beckman
Anoka-Ramsey State Junior College, Leader

Madeline Hammermesh
Normandale State Junior College, Recorder

Clifford Helling, Consultant in Special Education
Public School District 281, Resource Person

Charles Del McKeehan, English
Rochester State Junior College, Resource Person

VI Ways the Humanities Teacher Seeks to Reach the Superior Student

Robert Hall
Itasca State Junior College, Leader

Vernon Thompson
Willmar State Junior College, Recorder

Ronald J. Berk, Director, Project Upward Bound
General College, University of Minnesota, Resource Person

David Feldman, Assistant Professor of Special Education
College of Education, University of Minnesota, Resource Person

VII Philosophy and Religion as Junior College Courses

R. Clark Montgomery
Hibbing State Junior College, Leader

Wayne Moen
Mesabi State Junior College, Recorder

Robert Palogaari, English and American Studies
Augsburg College, Resource Person

Candido Zanoni, Assistant Professor of Philosophical Studies
General College, University of Minnesota, Resource Person

THE DISCUSSION

The late Professor Hajo Holborn of Yale University wrote in the third volume of his *History of Modern Germany 1840-1945* that the decline of German education served to explain, in part, why the German people voted Adolf Hitler into power and then appeared to condone his crimes. This system of education, Holborn said, did not deal with the whole man, but concentrated upon producing people

> ...proficient in special skills or special knowledge, but lacking not only in the most primitive preparation for civic responsibility, but also in a cannon of absolute ethical commitments... The higher philosophy and humanities of the period were largely formalistic or relativistic and did not provide a firm faith. In these circumstances, it was inevitable that so many people fell for cheap and simple interpretations of life and history as offered by the racists.

The faculty representatives attending this conference supported Professor Halborn and Dean Halvorson in principle by affirming the important place of the humanities in the junior college curriculum, by asserting that courses in this field should be open to the community as well as to all students, and by proposing that each junior college should become a focus in the geographic area it serves for study and creative expression in the arts and the humanities generally.

Foundations have been prepared, for every institution offers classes in many if not all of such subject fields as literature, music, speech, theatre, history, and fine arts. The task, therefore, becomes one of development ,synthesis, emphasis, and innovation.

The members of one discussion group pointed out, for example, that instruction in philosophy and world religions is a basic, but in Minnesota a somewhat neglected element in the development of a full complement of junior college humanities courses. Students need instruction in analysis, logic, ethics, aesthetics, and the philosophy of science for the synthesis, broad perspective, and habits of critical thinking they foster. The group stated that much of this instruction can be provided without recourse to specialists. A mathematician could well teach a course in logic; an art teacher could offer a class in aesthetics; a social scientist could present political philosophy or deal with social and moral values.

Courses in comparative mythology, world religions, and the basic tenets of Judaism and Christianity are especially important today when more and more students are coming to college without much awareness of the role of religious thought and practice in human affairs. Again, the conferees felt that development of such courses should not wait upon recruiting faculty. Local clergymen might well be invited to provide instruction, at least at the outset.

Another general limitation leads to provincialism. The humanities curriculum today tends to reflect the larger world of some decades ago instead of the smaller planet of the 1960's and 1970's. It concentrates too heavily upon the West, ignoring Asia, Africa, Latin-America. The members of one discussion group, therefore, recommended that all art forms, non-Western as well as Western, be included in the humanities curriculum in order to attack stereotyped views, lessen provincialism, and cultivate appreciation of cultural diversity. Students in the humanities classroom should be given opportunities to learn not only to tolerate, but to understand and appreciate the works of their fellow human beings at all times and at all places.

The cosmopolitan approach advocated here might be achieved by such relatively simple means as selecting texts which include materials from other civilizations as well as those illustrating the Western tradition. This would be particularly apropos in survey courses using anthologies. Art forms could be traced to original sources instead of stopping at Western beginnings. The novel and the detective story, for instance, were found in Chinese literature long before appearing in the West. New materials could be introduced in existing courses. For example, Oriental art could be incorporated into the regular art history course. Indian music could be discussed in a survey of musical forms.

Some institutions already can report developments of this kind. The course "Orientation to Theatre" at Willmar includes non-Western materials. Lakewood has a world literature course and one in Afro-American culture. A three-quarter sophomore sequence at Metropolitan progresses from Hebrew, Arabian, Persian, and Indian through Chinese and Japanese to African and Latin-American literature.

The materials studied in two General College world literature courses are selected to relate to the two themes of man's personal relationships and man's social relationships. Each of these courses combines Oriental and Western writings. Another course concentrates entirely upon non-Western readings, and includes study of painting, sculpture, and the dance. General College also offers integrated courses in general arts, Scandinavian-American culture, Latin-American culture, Afro-American culture, American Indian culture, French language and civilization, Spanish language and civilization, film and drama, and the living myths of Greece and Rome. Credits assigned all of these courses apply to baccalaureate degrees if the students earn grades averaging high enough to transfer to a four-year college. None of these courses carry any prerequisites; many of them involve team teaching and interdepartmental cooperation.

The problem of the thematic, innovative, interdisciplinary, or interdepartmental course is that few single faculty members have the broad expertise necessary to develop an exciting plan into a sound, mature, course of study. As in other fields, humanities instructors are educated as specialists. Curriculum development, therefore, often becomes a matter of cooperation, compromise, and – occasionally – of expedience.

Team teaching is an attractive possibility under such circumstances. It is not, however, a relationship to be entered without reflection and advance planning. In addition to its more obvious advantages, having a team of teachers extends the possibility that a student will find at least one instructor in the course to whom he can relate. The presence of other members of the team can liven discussion and facilitate classroom presentations. On the other hand, team teaching can lead to popularity contests, personality clashes, disagreements about subject-matter, and arguments about such nitty-gritty as special arrangements, record keeping, and reporting grades. Sometimes students are unable to assimilate the variety of points of view presented by the faculty team. Administrators sometimes balk at the extravagant use of three or four faculty members to teach only one class.

Moreover, team teaching often is handicapped by the necessity of interdepartmental cooperation. Various ways of achieving this kind of cooperation were discussed. They ranged in formality from institutional interchange and committees through guest appearances and panel discussions to faculty bull sessions, open door classrooms, and other proposals intended to combat the restricted and inflexible learning situations too much favored on college campuses today.

Field trips and resource persons from outside the faculty can facilitate course development enormously. The metropolitan junior colleges are particularly fortunate in this respect, a fact illustrated by the presence at the conference of educational consultants from the Guthrie Theatre, the Minneapolis Institute of Art.

Establishment of a statewide junior college center for the humanities also was proposed as a means of fostering growth of this portion of the curriculum. Such an agency could operate speakers and artists bureaus; coordinate play production, recital, concert, and convocation programs; establish a media center, arrange for teacher exchanges, and circulate a newsletter which would facilitate communication and disseminate information about experimental programs.

The faculty representatives attending the conference recommended that students be introduced to the humanities in small sections where new concepts can be explained carefully, reactions observed, and discussions encouraged. A teacher-student ratio of 1:25 was mentioned as being desirable. Contrary to usual practice in other fields, introductory classes in the humanities should be small because of the abstract qualities of the materials being studied, and because students should be encouraged to test principles in individual projects and independent research. Scheduling should be flexible, and classrooms should be capable of being arranged in various ways to suit different kinds of presentations. The P-N system of grading was mentioned as a means of encouraging students to try their wings both by venturing to register for a humanities course in the first place, and then, in class, to express his reactions to what he is hearing, seeing, and studying.

This latter consideration grows out of the conviction expressed at the conference that courses in the humanities are for *all* students, marginal as well as superior.

The conferees described marginal students as those who possess some ability, but who have vague goals and little motivation. Many come from lower socio-economic groups and are liable to have reading difficulties. Clifford Helling of the Robbinsdale public schools suggested that instructors dealing with marginal students should consider eliminating grading practices based upon the bell curve; discarding conventional expectations about the rate of learning; allowing students to repeat courses without penalty; setting behavioral objectives and performance criteria; and providing "hot" carrels containing tapes, film-strips, and programmed materials for the student to use at his own speed and according to his own needs.

Basic questions were raised concerning the goals and values of humanities for marginal students and for junior college students generally. Should freshman English be required? Do we have an obligation to teach communication skills? As junior college instructors, what values are we committed to?

The following specific suggestions emerged from the discussions of one of the discussion groups:

1. In courses for marginal students, strike a balance among reading, writing, listening, and speaking activities.
2. Offer developmental reading programs to students; encourage reading in areas of their own interests, choosing their own materials.
3. Encourage co-curricular programs allowing students to meet artists, musicians, and writers, people actively involved in aesthetic pursuits, in a semi-social atmosphere.

4. Listen to student feed-back as a means of estimating the relevance of courses.
5. In organizing courses, focus on a problem-solving approach rather than on the conventional division by traditional discipline.
6. Raise questions of fundamental values.
7. Institute regular workshops for research leading to development of materials for the marginal student.
8. Arrange for joint curriculum conferences.
9. Secure funds for controlled experimental studies based upon the special needs of marginal students.
10. Set teaching ceilings of a twelve hour load, maximum of two preparations, and class size of no more than fifteen for marginal students.
11. Free instructors having fifteen or sixteen hour loads of the equivalent of approximately one three-credit course per quarter for in-service development, including possible off-campus activities.
12. Increase faculty travel funds to S100.00 per faculty member per year.
13. Arrange resident tuition for junior college faculty on a reciprocal basis with other universities.
14. Promote subsidized schooling for those preparing to teach special courses.
15. Promote joint efforts by out-state schools to encourage visits by guest lecturers and artists.
16. Re-evaluate course distribution requirements for graduation with a view to increasing requirements in the humanities.
17. Exchange information on current innovative practices by reports to Institutional Studies Committees, for example, or through the junior college system's weekly bulletin.
18. Engage in the preparation of teaching materials and in responsible evaluation of materials, methods, and course content.

The superior student was described as having command of the mechanics of expression, facility in organizing materials, motivation, creativity, some knowledge of specialized subjects, and ability to handle abstract thought. In some of the Minnesota junior colleges, superior students are identified at the beginning of the academic year by means of ACT or other entrance scores, academic rank in high school class, and diagnostic themes. Separate honors programs and individual enrichment within regular classes are two of the most frequently encountered means of taking account of their special gifts.

Special arrangements for the superior student enrolled in regular courses tend to fall into three broad categories.

1. Guided supplementary reading. This usually entails individual or group conferences.
2. Special options in writing assignments leading to in-depth study.
3. Opportunities for creative writing which encourage experiments with the more subtle aspects of a writing type.

Separate honors sections can range over an extremely wide variety of readings and instructional methods. The followings were mentioned in this connection:

1. Films: campus showings discussed in depth or commercial showings assigned for analysis.
2. Library: honors programs should rely extensively upon the library; research and independent study projects should be stressed.
3. Broad cultural and aesthetic concepts should be used as a basis for planning the honors course.
4. Structure: a fundamental question in dealing with honors programs is the extent to which instruction is structured. Several possibilities, ranging from study projects beyond regular class meetings to no formal meetings at all, were proposed. The concensus was that honors programs should be handled partly in the regular class schedule and partly in specially arranged groups and individual appointments.

The group discussing humanities for the gifted student concluded that there are indeed such students in the junior college system; that provision must be made for these students by means of innovations within regular sections or through honors programs; that selection for an honors program must be made primarily by the department concerned; and that some flexibility in scheduling is essential if the program is to be truly effective. Instruction in the humanities involves more than curriculum students, and faculty. The field resembles the sciences in that learning is promoted if specially designed space is provided. One group of faculty representatives paid attention to this topic.

Discussion began after the group divided by discipline to decide what constitutes facilities adequate for studying music, art, and theatre. Several obvious and common problems merged. No one knew for example, how to make the practical ideas of the faculty known to the architects and officials responsible for building programs. No one could find a justification for using the present FTE (full time equivalent) student formula for determining square footage and money allotments when the very nature of the fine arts requires more area per student if the educational task is to be performed effectively.

At this point, Curtiss Green of Hammel, Green, and Abrahamson, St. Paul architectural firm, presented detailed plans and specifications for the fine arts building at St. Catherine's College, Gustavus Adolphus, and St. Benedict's College. It was immediately apparent that technical problems in a single area such as sound-proofing, so essential for music and speech, is sufficient to raise the costs of fine arts centers substantially. It was equally apparent that essentials were sometimes eliminated in order to economize. Mr. Green recommended that a faculty should outline precisely as possible the academic program for which a building is to be designed Faculty should visit colleges having new structures to view arrangements made for each discipline.

With these general, but basic facts in mind, and after visiting the new Wallace Fine Arts Center at Macalester College, the group made these recommendations:

1. Consultants selected by the college faculty concerned should be retained to work with the faculty and the architect to ensure that the basic architectural needs of each discipline are provided for in the plans.
2. The project architect should be required to meet with the faculty in order to be informed about and to implement ideas the faculty deems basic and essential.
3. Consultants and faculty should be involved in initial planning and when a need to alter original plans arises. Preliminary plans should be reviewed and approved by the faculty concerned before being accepted by the Minnesota State Junior College Board.
4. Project architects and faculty representatives should visit more than one completed building complex prior to planning junior college centers.

5. The formula used to determine square footage should be enlarged in the case of the fine arts to take realistic account of the special needs of the humanities.
6. Funds which may be available from sources other than the state could be used to increase square footage as well as to meet other needs already authorized.
7. Funds for equipping a new facility should be allocated from sources other than the already inadequate equipment budget.
8. Faculty members should establish priorities in order to determine essentials which must not be eliminated as planning progresses.
9. Constant communication between faculty and architect should be maintained during the planning and construction process.

The members of this discussion group outlined facility guide lines for each discipline. These general guides were then correlated in the light of the humanities as a whole, and in relation to the needs of the geographic area served by a particular college. A representative of the central office of the state junior college system was invited to hear the results of these deliberations, and to react to them. The group concluded by agreeing that if lines of communication are kept open at all times, if more realistic fund totals are made available, and if proper consultants are retained, then and only then can the best fine arts centers be constructed to enable the junior colleges to meet the requirements of the North Central Accreditation agency, the objectives announced to the student and the community, and the commitment it would like to make toward quality instruction in the humanities.

The faculty representatives attending this conference were keenly aware that teachers must bear much of the burden and responsibility implied in many of the proposals and recommendations reported in these pages. With this in mind, one group submitted to the conference a special statement on faculty, as follows:

> Recognizing that the comprehensive junior college requires faculty with many kinds of talents and preparations, we recommend that recognition be given to people with relevant experience and training. However, within a reasonable time period, junior college career teachers should take some junior college-oriented courses. Generally, we endorse the following suggestions for the preparation of new teachers made in the article "Preparation of Junior College Teachers" by Edmund J. Gleazer, Jr.:
>
> 1. Graduate courses in teaching field, with half of them of an interdesciplinary nature.
>
> 2. Supervised college teaching experience.
>
> 3. Continuing professional seminar.
>
> If a doctorate particularly applicable to junior college teaching is devised, its acquisition should be adequately compensated in the salary schedule.

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INNOVATION

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Counselors and Instructors in Social Science

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TOWARD A LIFE-FULFILLING CURRICULUM

Noel McInnis
Director, Center for Curriculum Design, Kendall College, Evanston

Schools destroy.

If you don't believe it, I suggest that you read Jonathan Kozol's *Death at an Early Age.* If you still don't believe it, read Nat Hentoff's *Our Children Are Dying.* Should these books convince you that only slum schools destroy, let me recommend John Holt's "School is Bad for Children," *Saturday Evening Post* (February, 1969). I quote from the beginning of that article:

> Almost every child, on the first day he sets foot in a school building, is smarter, more curious, less afraid of what he doesn't know, better at finding and figuring things out, more confident,

> resourceful, persistent and independent than he will ever be again in his schooling – or, unless he is very unusual and very lucky, for the rest of his life. Already, by paying close attention to and interacting with the world and people around him, and without any school-type formal instruction he has done a task far more difficult, complicated and abstract than anything he will ever be asked to do in school, or than any of his teachers has done for years. He has solved the mystery of language. He has discovered it – babies don't even know that language exists – and he has found out how it works and learned to use it. He has done it by exploring, by experimenting, by developing his own model of the grammar of the language, by trying it out and seeing whether it works, by gradually changing it and refining it until it does work. And while he has been doing this, he has been learning other things as well, including many of the "concepts" that the schools think only they can teach him, and many that are more complicated than the ones they do try to teach him.
>
> In he comes, this curious, patient, determined, energetic, skillful learner. We sit him down at a desk, and what do we teach him? Many things. First, that learning is separate from living. "You come to school to learn," we tell him, as if the child hadn't been learning before, as if living were out there and learning were in here, and there were no connection between the two. Secondly, that he cannot be trusted to learn and is no good at it. Everything we teach about reading, a task far simpler than many that the child has already mastered, says to him, "If we don't make you read, you won't, and if you don't do it exactly the way we tell you, you can't." In short, he comes to feel that learning is a passive process, something somebody else does to you, instead of something you do for yourself.
>
> In a great many other ways he learns that he is worthless, untrustworthy, fit only to take other people's orders, a blank sheet for other people to write on. Oh, we make a lot of nice noises in school about respect for the child and individual differences, and the like, but our acts, as opposed to our talk, say to the child, your experience, your concerns, your curiosities, your needs, what you fear, what you like and dislike, what you are good at or not so good at – all this is of not the slightest importance, it counts for nothing. What counts here, and the only thing that counts, is what we know, what we think is important, what we want you to do, think and be. The child soon learns not to ask questions – the teacher isn't there to satisfy his curiosity. Having learned to hide his curiosity, he later learns to be ashamed of it. Given no chance to find out who he is – and to develop that person, whoever it is – he soon comes to accept the adult's evaluation of him.

It is ironic that critics of education should be using metaphors of death and destruction, for we generally think of education as preparation for *life.* Actually, however, education as we know it tends to be a postponement of life at best, and a life-destructive force at worst.

Schools destroy because they systematically deny the development in our young people of their life-fulfilling capacities. Young life is remarkable for its wonderful potentials — potentials for creativity, problem-solving, decision-making, valuing, abstract thinking, aesthetic sensitivity, and empathy with other humans. And what do we do to develop these potentials?

Creativity

The principal skill imparted in our educational system is the ability to reproduce relatively intact, the information, ideas and aesthetic styles of others. The forced consciousness which this skill entails essentially precludes the more random mental activity associated with creativity. And the retention of a creative (and hence unique) idea is a potential threat to the accurate reproduction of received information and opinion. Pre-school children are generally noted for their creative spontaneity. This is one of the first life-fulfilling capacities that we manage to extinguish in preparing young people for life.

Problem-Solving

The one area in which American students are well-trained is that of problem-solving. They have thousands of hours to solve thousands of problems: other people's problems, mostly those of textbook authors and of teachers, mechanical problems, mostly involving printed numbers and words. But life-fulfillment implies the generation and solution of one's own problems, which are always personal and seldom greatly affected, except secondarily, by things in print.

Decision-Making

This currently popular phrase, in its most meaningful sense, refers to the ability of an individual to exert significant influence over the forces which order his life. Does our educational system contribute to the development of such an ability? The answer to this question is, "Yes, to the extent that a student is free to exert significant influence on the principal force which orders his life, i.e., the educational system." In other words, the answer is "No."

Valuing

To value means to be aware of what your values are, to be aware of how you got your values and to be able to reformulate your values in the light of new experience, new information or in the event of a value-conflict. There is virtually nothing in our educational system to make students conscious of the valuing process. But they do learn values from us. Unfortunately the values they learn best are not the ones we "teach." For instance, we teach the values of democratic cooperation but most students learn authoritarian competitiveness. Values are imparted by process, not by rote, and the process of education in our country is authoritarian and competitive. The form of communication influences behavior more effectively than the content.

Abstract Thinking

One thing is certain: our educational system devotes overwhelming attention to development of the capacity for abstract thought. This aspect of our task has been described as follows:

> We play a game in which we and our students are on opposite sides, where we seek to best them in a race which is 'fixed.' The teacher asks the questions (and has all the answers even before he asks) and the student goes about 'working' for the answer. These exercises become 'hurdles' that the successful student can overcome. The unsuccessful student cannot clear the many obstacles and hurdles: it is too bad, but **c'est l'ecole!** Perhaps the clearest lesson children learn from this is that ours is a

> dogmatic, autocratic society in which one needs only to agree with authority and defer to it for direction.

Aesthetic Sensitivity

One of my own students described the way in which we stifle this capacity in our students:

> Feel you a wasteness in your soul, an empty part you do not understand? Come back to long ago when a child you were all there still.
>
> Rock, slide, gurgling baby rolls his eyes to swing the room out the window letting sunshine warmth in Smelling mother smiling near, he rolls over toys of sound then laughs.
>
> Later, he becomes aware of playing with himself. He watchs, listens, smells, tastes, touches. Mommy and Daddy loom into sense, and he knows what play interests them. As he grows, his awareness of pleasing his parents becomes him. He practices for them when the time is for play.
>
> Halfway between, the child goes away to school. Teacher dwells on sight of number, the sound of word, hearing to understand. One day he eats paste to find that tasting is for meals. The window is closed to fresh air. Smell is outside learning.
>
> The older, the farther play becomes. No longer does the child explore the world through his senses and imagination. The child drops the sound of real his words and haunts books of others' written words. No more does he listen to subtle whisperings outside, but only the authoritarian which he repeats back. Adapting, he never realizes.
>
> The child has lost his senses. He isolates his mind from his body and relies on his "intelligence." The tragedy is that intelligence now means working with materials given from others and proceeding sequentially. With the senses out of use, the child loses the ability to discover. As he grows older, he feels he has lost something. He feels empty, but he can't see what it is. He's stopped really seeing.

Empathic Understanding of Fellow Creatures

Denied the opportunity to understand himself, the student has been deprived of the principal resource available for relating to others. How can he love other selves when he has not been given the opportunity to feel adequacy about his own?

Schools destroy in all these ways. And as if these denials of human potential were not enough, the overall negativism of the educational experience systematically thwarts any sense of life-fulfillment. The source of this negativism is obvious: our educational systems tend to treat every student as if he were a remedial student. Look at it from the student's point of view: for twelve to sixteen years you go to school to find out what is wrong with you. Seldom do your teachers emphasize and build upon what you do right, unless you are one of the lucky ones who is right most of the time. And even if you are among the "lucky," you still know what the teacher will be looking for on every examination – your errors. Whether you are at the bottom of the class or at the top, you are in school for the same reason: to overcome your ignorance. You go to elementary school for six years to overcome your ignorance. This qualifies you to go to junior high school where you will spend two more years overcoming your ignorance. Graduation from junior high entitles you to four years in high school for the continued overcoming of your ignorance.

If you overcome your ignorance to the satisfaction of all concerned, you are rewarded with the opportunity of higher education, where you can further pursue the overcoming of your ignorance to the satisfaction of all concerned. That is, to the satisfaction of all except (more than likely) yourself.

Schools not only thwart the development of human potential and self-esteem, they also deny the integrity of the individual. Like all mass-production procedures (for "stations" on the assembly-line read "grade levels" in the educational system.) our schools are designed to make standardized products out of raw material. Mass-production procedures are great for converting *inanimate* raw material into standardized products, but they suceed only because the initial raw material is itself highly standardized. Assembly lines make uniform products only when they are manipulating uniform raw materials. Mass-production procedures are barbaric when applied to people, because human "raw material" is not uniform. A six-year-old child is unique in the universe. When he is subjected to our mass-production techniques, and is forced to compromise his uniqueness, he finds himself on a *dis*assembly line. He is literally (in the psychic sense) dismantled.

He is dismantled because we are as intolerant of differentiated raw material as the notorious Greek god, Procrustes. Procrustes forced all who passed his way to lie on his bed, some passersby were too long for the bed, and he chopped them down to size; other passersby were too short, and were stretched to fit the bed. Similarly, students come to us with knowledge which does not conform to our own conceptions, and we promptly cut them down to size. Others come with insufficient background to manipulate our knowledge, so we shove it in all the harder. All who pass through our classes are thus standardized to our own specifications. Just as Procrustes could not bear to allow people to make their own accommodation to his bed, so we educators are reluctant to allow students to make their own accommodation to our knowledge. *Our* choice, arrangement, and interpretation of knowledge is the only one we care to allow.

I am not suggesting that we are all sadists. I am really only suggesting that schools destroy teachers as well as students. We do to those who follow us what was done by those who preceded us, thus assuring that the sins of the fathers shall be visited unto the fourth generation.

* * * *

Enough of this accounting of the wages of sin. Let us choose life. Let us examine the possibilities for a life-fulfilling curriculum.

I

A life-fulfilling curriculum would replace the presently overwhelming remedial emphasis with a *developmental emphasis.* The student in such a curriculum would feel that he is in school to develop his competence rather than to overcome his ignorance. His teachers would relate to his strengths by pointing out what is right with him, rather than relate to his weaknesses by looking for his errors.

A member of our English faculty decided to allow her students to choose the length, form, and subject matter of their compositions, as well as the frequency of submission. She evaluated their contributions in terms of strengths rather than in terms of errors. Given such freedom, many students exhibited dramatic improvement in the quality of their writing. But one day the instructor decided to experiment with a return to the old system, and assigned a common theme to the entire class to be due at a specific time. The formerly D-level English students who had been writing B-level compositions under the new learning design reverted to D-level performance.

It is generally known that when people feel threatened, they do not express themselves as competently as they might. It is also generally known (at least among students) that of all the threats we faculty throw at them, the greatest one is English.

Nowhere are students made to feel as inferior and incompetent as in English classrooms, whatever the level of instruction. English education is so structured as to enable us to see how many mistakes we can catch our students making, and one thing students learn better than anything else is that they do make mistakes. They write in constant fear of making mistakes.

There is a certain species of snake that preys particularly on rabbits. The snake lies at the mouth of the rabbit's den and stares in at the rabbit until the rabbit becomes so overwrought that he runs out into the jaws of the snake. Thus, the prevailing tendency in our present psychology of education. Students know that we lie in wait for their errors and they perform to our expectations. This is a clear demonstration of the principle that the form of education influences behavior more thoroughly than the content. We present students with the information they need in order to write correctly, but they learn that we lie in wait for their errors. True to form, they produce what we are really looking for. But remove the threat, give them freedom of expression, and reward what is right rather than condemn what is wrong, and you are likely to find a competent human being.

At Kendall, we assume that if the developmental approach is good for students and it is also good for faculty. Two years ago one of our faculty members was the subject of considerable complaint by his students. They liked him personally, but they abhorred his overly-pedantic teaching methods. Each time a student complained to me, I suggested that the complaint be lodged with the instructor in question since only *he* could make the necessary changes. But the students were afraid to confront him individually for fear that their grades would be in jeopardy, and they were reluctant to confront him as a group for fear of hurting his feelings. One day I asked the students what they liked about my colleague, and found that they had some very positive impressions in addition to the negative ones. I suggested that they go to him and say "When you do (or are) such and so in the classroom we think it is great. We feel like we are getting something out of the course. Why don't you do it (be that way) more often?" They did. Two days later he related the experience to me as an embarrassing, but positive one, and indicated his wish that all students were as positive. The students, for their part, reported visible improvement in his classroom manner.

Our English Department chairman later used a similar approach in the formal evaluation of his department members. The evaluator was an English senior from Keuka College, New York, where every student is required to perform a quarter of field experience. She was asked to observe each section of our English course and to write up a report in terms of what seemed to be working best in each particular classroom. This gave the chairman an opportunity to publish an evaluation of the entire department in a form which was not only minimally threatening to his colleagues, but which also helped them to be aware of successful teaching methods being used by others.

One of the most dramatic attempts to counter the remedial negativism of the conventional curriculum has been taken by Moraine Valley Community College, in Palos Hills, Illinois (south suburban Chicago area). Moraine Valley has abolished the "F" grade. Students either pass their courses with an "A", "B", "C", or "D" or else they receive an "X" indicating that they did not meet the requirements of the course. Courses for which a student does not meet the requirements are entered on his transcript, but non-completion does not affect his grade point average. The student is free to take the course over or (if it is not required) to forget about it. The entire psychology of grading and evaluation is transformed by such a procedure. Students are not penalized for a bad start in college. An "A-B" sophomore who might have failed some courses in his freshman year can now attain a cumulative grade point average which is indicative of his current level of performance.

While the Moraine Valley grading system ceases to be punitive, it remains realistic. While students are not placed on probation, those who fall short of the requirements for numerous courses are counseled on the alternatives: a different curriculum at Moraine Valley, or a different educational experience elsewhere. Another alternative which makes much sense, considering the well-known disparity in rates of learning, is to allow the student additional semesters to earn his degree.

Someday the entire educational experience will be one of affirmation. In the meantime, it is necessary to develop particular measures to restore the sense of self-esteem that has been undermined by the earlier educational environment. At Kendall we have developed, in cooperation with Achievement Motivation Systems, Incorporated of Chicago, the Human Potential Seminars. Unlike most group processes (group therapy, sensitivity groups, etc.), the Human Potential Seminars focus on what is *right* with participants rather than what is wrong with them. Students are exposed to experiences in which they learn of their individual capacities for achievement and success, and of the personal strengths which each can harness for even greater achievement and success. The students develop an awareness of their personal value systems, learn how to deal with value conflicts, and discover how to take increased direction over their own lives. In short, they develop affirmative autonomy. In the first semester that these seminars were offered, 69% of the participating students increased their averages by at least one grade point. And academic competence was only incidental to the other areas of achievement developed by many of them.

II

A life-fulfilling curriculum would also allow for the maximum recognition of individual differences among students. More than anything else, perhaps, it is the difficulty inherent in accommodating individual differences among large numbers of persons that accounts for the ego-destructive force of our present educational systems. But while this is an adequate reason for the problem, it is no excuse for the situation. Individual differences can be accommodated in many ways, simply by allowing our students more options. The growing accessibility to tape recorders and movie cameras, for instance, makes it quite possible to give students an option to the printed word as the sole medium for producing term projects. Some students are either more ear-oriented or eye-oriented than print-oriented, and unless we feel that every student is a potential graduate researcher in our particular discipline there is no reason why *everybody* has to do a term *paper.* I would rather hear a good oral presentation on tape or see a good visual presentation on film than read a poor written presentation on paper.

With some difficulty (but not much) on our parts, we could present students with alternative methods of fulfilling our course requirements. Essentially what this means is developing a combination of trade-offs between term projects and examinations, although it can (and should) also mean permitting content options as well. We tend to assume that the material *we* choose to cover is necessary, valuable, and meaningful to everybody. Such reasoning never was very substantial, and it is absurd in today's world where, to quote Margaret Mead, "We must educate people in what nobody knew yesterday and prepare people in our schools for what no one knows yet, but which some people must know tomorrow."

A recently common practice which we initiated at Kendall in the early 60's is to enrich curricular options with topics courses. What this means is that a faculty member, with the approval of his division chairman and dean in consultation with (but not with the formal approval of) the curriculum committee, can offer a course of a topical nature on a trial basis. Depending upon the success of the courses, it can later be added to the permanent curriculum, offered again in the topical curriculum, or discontinued This arrangement makes it possible for us to offer, with minimum bureaucratic procedure, timely and meaningful courses on such subjects as totalitarianism, revolution, violence, white racism, existentialism, the city, problems of inquiry, and technology and modern civilization. The topical system has also provided a means of introducing more traditional courses on a trial basis, such as Russian history, Asian history, anthropology, and marriage and the family, allowing decisions about their inclusion in permanent curriculum to be based on hindsight rather than prediction.

The greatest tool for accommodating individual differences is, of course, the computer. We have come full circle since Mark Hopkins, with a student on one end of a terminal and a computer on the other. Computer-assisted-instruction carries with it the potential for universal one to one education, freeing the teacher from the role of data transmitter to enacting a more human role of facilitator, stimulator, counselor, and guide.

It is often observed that you don't really learn a subject until you have to teach it. I believe that this statement is true, but unfortunately we have never been able to capitalize on its logic and require our students to *teach* our subject matter rather than merely absorb it. The computer makes this possible, although scarcely anybody seems to have realized it. A la' Marshall McLuhan's dictum, we tend to use a new technology like the old technology and thus *we* continue to be the teachers. *We* program the computer to teach the students. When we realize that the computer is a learning machine when we are programming it to be a teaching machine and that our students should be programming (i.e. teaching) the computer rather than ourselves, we will be using the computer's full potential as an instructional tool.

III

A life-fulfilling curriculum would allow for the maximum development of the human capacities for creativity, problem-solving, decision-making, valuing, abstract thinking, aesthetic sensitivity, and empathy with other humans. It would be a fatal mistake, however, if we satisfied ourselves in this respect by expanding our course offerings to cover each of these areas.

You don't arrive at process by content – again, it is the *form* of communication which influences behavior more effectively than the content. You don't effectively teach group dynamics by lecturing on the subject, you teach it by creating a group dynamic and making the participant aware of it. Similarly, you don't effectively teach democracy by conducting a discussion of democratic terminology, you teach it by conducting a democratic classroom. (I suspect, incidentally, that this is one reason why so few young people learn democracy and why "democratic" organizations like SDS tend to fall back on totalitarian means. The sins of the fathers are sometimes revisited upon the fathers themselves.)

Creativity, decision-making, problem-solving, etc., are (among others) our life-fulfilling disciplines. In order to teach these disciplines, we must rethink and redefine the present curriculum. Creativity, *et. al.*, are human operational disciplines not subject matter manipulation disciplines. If we are to develop the human operational disciplines we must *reorder the present curriculum in operational terms* rather than merely expand it in subject-matter terms. This essentially means that we must develop a curriculum of experiences.

Reordering the curriculum in operational terms does *not* mean the abolition of subject matter. It merely means that the process for form of instruction is integrated with content in a more effective manner, the criterion of effectiveness being the increased extent to which the desired behaviors (creativity, etc.) are attained. Practically, it means identifying experiences which enhance the development of the life-fulfilling disciplines, and then redesigning the encounter with subject matter in appropriate experiential formats.

Although I have never seen a full-blown curriculum of experiences (with the exception of what is usually referred to as "real life"), I think I can convey an impression of what such a curriculum would look like. It would certainly incorporate a proposal recently endorsed by our curriculum committee whereby the College will give academic credit for participation in community service and action work. Students will choose such work from a variety of experiences available with numerous agencies and groups, public and private, ranging from the Office of Economic Opportunity, VISTA, the American Indian Center, and Chicago State Hospital, to citizen's action groups which may be concerned only with the problems of an immediate neighborhood. The College will shortly establish a Community Services Institute for the purpose of coordinating this program. Students who wish to receive academic credit for their participation in this program (non-credit participation is also possible) will be required to attend a weekly seminar for the purpose of sharing and critically reflecting on their experiences in the light of appropriate reading assignments.

A curriculum of experiences would erase the present, somewhat senseless distinction between the curriculum and the extra-curriculum. Dormitory living, student activities – all aspects of the student experience – would be treated as opportunities for the development of the life-fulfilling disciplines, and present barriers to maximal development thereof (such as *in loco parentis)* would be removed. Even the distinction between the curriculum and the non-curriculum would disappear as students joined faculty in increased participation in institutional policy-making and policy-implementation. At present there are three "curriculums": the student curriculum of being in college, the faculty curriculum of teaching courses, and the administrator's curriculum of managing the faculty and students. In a curriculum of experiences, real life would cease being primarily for the benefit of students, courses would cease being primarily for the benefit of the faculty, and management would cease being primarily for the benefits of administrators. All three of these areas of experience being legitimate aspects of academic life, they would all be shared among the three constituencies.

Naturally the experiences would not be shared equally, because students do tend to have more expertise at experiencing real life, etc. Instead of the present authority structure based upon age and status differentials, the life-fulfilling authority structure would be based on expertise. For instance, students would participate in the administrative function of hiring, evaluating, promoting, and firing faculty, not to judge the faculty member's competence in subject matter, but to contribute the intelligence that no faculty or administrator could ever have, but without which a fully-informed personnel decision can never be made: how well does the faculty member communicate what he knows to his students? No colleague or superior of mine can ever know how well I communicate to my students, they can only infer it. Such knowing is the particular province of my students only.

In a life-fulfilling curriculum the particular wisdom of all will be tapped for the general benefit of all. It might be argued that a faculty member does not benefit from a student recommendation to fire him, but we have a long-standing principle to deal with such dilemmas. It is called "the benefit of doubt". In a life-fulfilling curriculum the benefit of doubt would be generally allocated to the students. At present, of course, it tends to be up for grabs between the administration and the faculty, which is quite reasonable since schools presently exist primarily for their convenience.

In a curriculum of experiences, two things would happen to subject matter. It would be reorganized around problems and issues, and it would be conceptualized. Everybody knows that life does not come to us in packages labeled "Sociology," "Economics," "Biology," "Art," etc. Valuable as these disciplines are, they enable us to see only part of any given human experience, not its whole. It is becoming increasingly apparent that while the world will submit to sociological analysis, economic analysis, mathematical analysis, physical analysis, logical analysis, etc., its problems will not submit to a sociological solution, an economic solution, a mathematical solution, a physical solution, a logical solution, etc. The world presents its problems in wholes, and partial solutions often only aggravate the total problem. Today's student discovers that his forebears are presenting him with the problem of managing an entire world, but are preparing him to manage only a tiny discipline. From his perspective then, analytic, fragmented disciplines are a hang-*up* because we need synthetic, integrative disciplines to make the world hang *together.* Having learned how to think his experience of the world to pieces, the student needs courses which will help him think it back together again.

The solution to this problem is not to be found in the creation of what are generally known as interdisciplinary courses. The only difference between an interdisciplinary course and a single disciplinary course is the increased number of single disciplines one uses as a point of departure. In interdisciplinary courses, the fragmented structure of knowledge remains inviolate. Bringing separate disciplines closer to one another does not meet our eventual need to transcend their boundaries, confronting experience as a whole. What we need are *trans*disciplinary courses. Transdisciplinary courses take one of three forms: dialogue concerning a topic or issue, involvement with a real-life problem, or a mixture of these.

The topical or issue-oriented format allows us to confront the various realities of our existence in wholes. Its only threat to the traditional disciplines is that it forces them to encounter one another. Actually, this is not a threat, but a service, since the encounter of several disciplines in the context of a mutually relevant concern results in what the disciplines need most: more relevance. The real threat to the traditional disciplines is not a mutual encounter which will enhance their relevance. It is, rather, a continued lack of mutual encounter which will assure their increasing irrelevance.

Transdisciplinary encounter requires dialogue. The appropriate mixture of single-disciplinary insights relevant to any given problem can be learned by no other method. Dialogue, of course, implies more than discussion. It essentially means reality testing, which ultimately requires personal commitment and involvement. Life problems are not solved by thinking alone, even if the thinking is transdisciplinary. They are solved by action based on thought and further thought on said action which in turn leads to more realistic future action. Thus, even as transdisciplinary curriculum formats supplement analysis with synthesis, so does transdisciplinary methodology supplement intellectual detachment with active life-involvement. These supplements (actually *complements)* to our educational diet are long overdue.

We do not lack for topics and issues around which to structure courses: revolution, totalitarianism, violence, poverty, race, youth, public health, education, human rights, law and order, freedom, responsibility – the posssibilities are endless. Similarly, we do not lack opportunities for personal involvement with real-life problems. We need only repeat some of the above topics and issues, which in most communities present themselves as live problems in need of solution: violence, poverty, race, education, human rights. Models for the implementing of transdisciplinary experience have already been presented in terms, of the topical curriculum and the community service curriculum.

In addition to reorganizing traditional subject matter around issues and problems, the life-fulfilling curriculum would conceptualize it. In essence, this means that the content of such subject-matter disciplines would be reduced to the essential minimum necessary for conveying the essence of discipline. In the introduction to sociology, for instance, the course would be reduced to a few fundamental concepts like stratification, acculturation, alienation, etc.. If the student were enabled to become highly sophisticated in just a handful of such concepts, he would have a conceptual framework with which he could pursue the further study of the subject (even in more "advanced" wirtings) with increasing self-initiative.

On the face of it, this might not seem new. Most college instructors attempt to teach concepts rather than data. Unfortunately, they tend to present the concepts in the form of data. The experientially oriented instructor, recognizing that you can't get here from there, would begin with the student's concrete, unsophisticated experience of a concept and build a bridge to his own abstract, sophisticated one. For instance, nothing will alienate the uninitiated sociology student quicker than a fifty-minute lecture on alienation. However, one could engage his students in a mutual probe of those things in our society which prevent people from relating to each other meaningfully. These factors could be discussed as the students bring them forth, and the particularly relevant ones could be noted on the board. At some point, when the group's experience has been tapped, the instructor could indicate that this problem has been studied by sociologists since the nineteenth century, and that they call the problem "alienation."

The main virtue of this approach is that it establishes relevance, a burden which is always on the shoulder of the instructor who sincerely wants to communicate. Since students cannot get here from there, it does not make sense to take a concept into the classroom and rattle it off at our level of understanding. When we walk into the classroom and begin lecturing to our students with no clear indication of what they know that is relevant to what we know, we tend to pitch the ball to the students in such a way that it ends up in left field having never approached the batter.

We do something else that is equally important when we conceptualize our subject matter from the starting point of the student's own experience. In so doing, we are essentially saying that sociologists have much to say about something that students already know about. This approach acknowledges that students have something to contribute, that *they* know something, and that you can offer them more, to increase the value of what they know. We think that our lectures help students to build on what they already know, but the tragedy of the lecture system is that the lecturer does not know what his students already know and can only guess at their knowledge. Lecturers may cover material, but I suspect they also smother students. It is time we asked ourselves whether we are in the classroom for the benefit of our material or for the benefit of our students.

How do we get from our present subject-matter curriculum to a life-fulfilling curriculum? By starting. And where do you begin such a massive project? How do you overcome the constraints of the present system, which militate against almost all of what I have said? Approximately 200 colleges around the country have found a potential answer to this question: the 4-14 calendar. My own college represents the first junior college to adopt this calendar (to become operational this fall), and we adopted it precisely because of the freedom it gives us to move in the above directions.

Although there are many variations of the 4 1-4 calendar, the one we have adopted appears to combine the best experiences of other campuses on this plan without jeopardizing our role as a transfer institution (87% of our graduates go on to four-year colleges). We have chopped one week off each of our traditional semesters and moved the beginning of fall classes up a week and a half, in order to create a third interim term in the month of January. The regular terms will be fourteen weeks plus a week for final exams. We are replacing the semester-hour system with the unit system. Since each class will be scheduled four days a week, we are advising transfer institutions that one unit is equivalent to four hours of credit. Such an equivalency permits us to reduce the faculty teaching load by one course each semester, primarily because students will be taking one less course per semester. Our faculty, for whom twelve hours has been a standard full-time teaching load, will thus teach three courses or sections each semester rather than four. By paring a few courses from our curriculum we can do this without increasing the instructional budget.

Thus, the first constraint that we have removed is that of having to pay attention to too many things at once. It will be possible for both faculty and students to go into greater depth because both will be spread less thinly; the faculty in terms of numbers of students and the students in terms of numbers of subjects. Since classes will be scheduled on Monday, Tuesday, Thursday, and Friday, we have also relaxed another constraint – the daily lock step. Every Wednesday will be free for conferences, workshops, field trips, special meetings, etc. We are also attempting to relax the lock step on the other four days by pointing out to the faculty that the equation of weekly hours in the class and credit-hour course equivalents is a purely arbitrary convention. Some faculty will probably meet their classes four days a week for the first few weeks and then split every class into four small tutorial groups which will each meet once a week.

The most exciting aspect of the 4-1-4 calendar is, of course, the January interim. During January faculty members will teach only one course, on an intensive daily basis. Students will take only one course. The interim will be devoted almost exclusively to courses not offered in the regular semester, and radical experimentation will be strongly encouraged. It is our intention that the interim curriculum should approximate that of a free university, with one exception: that it be offered for academic credit. Students will have the option of designing and teaching their own courses, with appropriate faculty supervision. Independent study, tutorials, work-study, community action, and a variety of off-campus experiences including study-abroad will be made available. By making our own study-abroad programs available to a limited number of students from other 4-1-4 colleges, we will make our students eligible to apply for nearly one hundred study-abroad programs offered by the other colleges. We will also exchange students with other colleges for on-campus courses, as well as various off-campus interim programs. Thus, during the month of January there will be very few of the traditional constraints on curricular reform, and we will have an opportunity to experiment with models which can then be applied during the more traditional semesters. We will have an annual revolution in January for the sake of a hastened evolution of our regular curriculum.

A final constraint which we have considerably relaxed is course requirements. The adoption of the unit system made it necessary to reduce the number of required courses, lest our curriculum be almost totally prescribed. Now only eight of the seventeen units required for graduation are prescribed, and many of these area requirements rather than specific course requirements. This gives the students over fifty percent elective options.

Schools do not have to destroy. They can foster growth with only a little more effort than it takes to stifle growth. Buckminster Fuller, creator of the geodesic dome and architect of the United States Pavillion at Expo 67, once observed, "There is no such thing as genius. Some children are less damaged than others." As education becomes increasingly impersonal in our large four-year institutions, I believe that our mission as junior college faculty becomes clear. Insofar as schools destroy, and insofar as teachers are the agents of that destruction, it is essential that junior college teachers be less damaging than others.

SPEAKERS AND RESOURCE PERSONS

Russell W. Burris, Director, Center for Programmed Learning, University of Minnesota

Daniel Conrad, Social Studies Department, Hopkins Public Schools

Dorothy Dodge, Professor, Political Science Department, Macalester College

Allan Dollershell, Librarian, Rochester State Junior College

Lowell R. Gillette, Dean of Graduate Studies, St. Cloud State College

Philip C. Helland, Chancellor, Minnesota State Junior College System

Richard Hill, Speech, Rainy River State Junior College

William Hobson, Minnesota State Council on Economic Education, University of Minnesota

Lawrence Kaupp, Geography, Director of Counseling, Itasca State Junior College

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Donald M. Monson, Librarian, Audio-Visual Extension, General Extension Division, University of Minnesota

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THE DISCUSSION GROUPS

I **Edward F. Fujan**
Rochester State Junior College, Leader

Mae Seely
Rochester State Junior College, Recorder

II **Thomas E. Carey**
North Hennepin State Junior College, Leader

Dale E. Wright
Willmar State Junior College, Recorder

III **John P. Oldendorf**
General College, University of Minnesota, Leader

Joe V. Walmsley
Normandale State Junior College, Recorder

IV **Jon Willand**
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Michael Cummins
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V **Terry Larson**
Brainerd State Junior College, Leader

Donald Hinz
Worthington State Junior College, Recorder

VI **Peter E. Meintsma**
Anoka-Ramsey State Junior College, Leader

Dorothy Warrick
Anoka-Ramsey State Junior College, Recorder

THE DISCUSSION

Two of the discussion groups at this conference were composed exclusively of counselors. The thinking in one of them centered, first, upon the role of counselors in relation to innovation. It was concluded that because of the cross-disciplinary exposures inherent in counseling, counselors should be active in initiating innovative thinking on matters relevant to the total college. It was felt that this kind of "activism" would be facilitated by increased communication among counselors in the system. To this end plans were made for distributing a brief newsletter summarizing the discussion of the conference groups. If this could be done prior to the meeting of the Minnesota Junior College Faculty Association in April, plans could be made then for regular exchange of ideas and information.

Among the issues of concern was the matter of course prerequisites. To what extent, the counselors asked, do we unnecessarily inflict prerequisites upon students? The necessity of meeting "requirements" during the first quarters of his college experience can act as a weapon against enthusiasm, particularly for students whose motivation has only begun to develop and is still without breadth and depth. "Package" programs which bring all the basic disciplines into play around consideration of a single content theme are being used with seeming success at one institution.

Inconsistency regarding transferability of credits among different institutions in the state is a problem. Discussion of this point led to the suggestion that there are some matters of policy regarding which state-wide unity would be helpful without violating local autonomy. Further discussion is needed to determine what policy matters could profitably be determined on a state-wide basis.

There was general agreement that we need to find a way of relieving the continuing and overwhelming punitiveness of the "F". One institution has under consideration a proposal to allow students the option of accepting or rejecting "D's" on their records, and to end the practice of recording "F". The idea of allowing a student to work in a course until it is satisfactorily completed by re-taking it in successive quarters was introduced. The limitation of an arbitrary time period was felt to be an unnecessary one. The proposal was made that a student should be allowed additional time to complete a course if he needs it, providing he is willing to pay for it.

Some discussion time was given to what is being done for the illprepared student. One counselor indicated that group work in study skills had been tried at his institution, but that this had been generally ineffective. It was found that in working with individual students there was success in those cases where there was commitment on the part of the student to working with – or perhaps *for* – the counselor.

At other institutions, group counseling is offered to students on academic probation. Still another college requires students on probation to work with a counselor on study skills. Tutoring in troublesome subject areas has met with varying success on various campuses. Exchange of information about these matters and about practices in student advising is desired. Faculty members who do not wish to advise, for example, perhaps should not be forced to do so.

Members of other discussion groups also called for a formal or informal communications system by means of which faculties might keep abreast of innovations undertaken by their colleagues. Regional meetings of instructors in the social sciences were suggested.

Meanwhile, some experiments have recently been completed or are currently under way. These include:

1. Using tape recorders for special reports, to save having to read multitudinous papers.
2. Letting students teach sections of a course.
3. Securing resource people to supplement usual classroom presentations.

4. Group presentations – dividing classes into groups, each responsible for a specific part of the material being studied; not confined to the familiar panels or symposiums, the group can utilize any form of presentation it chooses.
5. Seminar – ten or twelve volunteers excused from attending class to read approximately a book a week and to meet in homes for an evening of discussion. An added burden, but the better students were stimulated and the instructor had additional time to work with the slower learners.
6. Independent study – one institution has inaugurated a program allowing capable students to earn up to six credits of electives by this means.
7. Films, film strips, single concept films, slides, opaque projectors – all widely used and commonplace.

Computers, tape-telephone centers, hot carrels, closed-circuit TV, and other kinds of electronic hardware are fascinating and offer intriguing possibilities, but they are very expensive. As long as instructional budgets are limited and library and other needs so acute, extensive investment in this sophisticated kind of equipment probably should be postponed until research measures the extent of their effectiveness, efficiency, and utility.

There are other practical limitations upon innovation Students, administrators, parents, advisory boards, and legislators are not invariably found among those applauding departures from tradition. In fact, resistance to innovation is likely to be encountered, especially as long as knowledge of goals or workability is lacking in specific instances. The matter of credit transfer also is a limiting factor which should not be ignored.

In spite of all this, faculty members might be willing to experiment in their classrooms or at curriculum committee meetings if they knew their initiative and imagination and willingness to work would be supported by financial grants, released time, or even by the expressed sympathetic interest of administrators. In an effort to measure the views of the Minnesota State Junior College Board on the subject of innovation, the majority of the faculty representatives attending this conference requested that the central office of the state system outline its attitudes. In a resolution sent to Saint Paul, the conferees asked for financial support of professional meetings designed to provide cross-fertilization of ideas. The document requested funds to strengthen subject-matter discussions at the annual conventions of the Minnesota Junior College Faculty Association by paying the fees charged by consultants and resource persons. It asked: Will the Minnesota system make alterations in funding and scheduling to encourage innovation? What kinds of innovation does the Minnesota system endorse? Without the support of the Minnesota system, the document asserted, any discussion of innovation by junior college instructors lacks direction and meaning, and there is no point in holding a conference based upon such a theme.

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INNOVATION

CONFERENCE III

Instructors in Mathematics, Natural Science and Occupational Education

APRIL 13-15, 1969
Nolte Center for Continuing Education

PLANNING COMMITTEE

Charles Blackstad, Mathematics, Worthington State Junior College, Chairman

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Leo Keskinen, Dean of Instruction, Itasca State Junior College

Herbert Moline, Biology, Ely State Junior College

William B. Schwabacher, Professor of Physical Science, General College, and Minnemast, University of Minnesota

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THE MEANING OF COMPREHENSION

Dr. Don A. Morgan

Former United States Department of State Foreign Service Officer in New Delhi, Munich, Washington. Subsequently, junior college counselor, instructor, president; presently, Kellogg Foundation Post Doctoral Fellowship, Junior College Center, University of California at Los Angeles. Dr. Morgan will join the graduate faculty of the College of Education, University of Minnesota, in September, 1969.

To attempt to add to the concept of *comprehensive* higher education at the University of Minnesota, is almost akin to the bravery of rookie NFL fullbacks and seventeen-year-old Marines -- it is best just not to think of possible consequences and to plunge in. The University of Minnesota has a proud tradition not only in general education with the General College, but in an unmistakable commitment to community service. It has been said that when an apple tree shows signs of ill-health in the backyard of a Minnesota burger, two things occur: 1. the citizen calls the University and *expects* comeone to tell him what is wrong with his tree; and 2. the University expects to be called. Nonetheless as the State of Minnesota has, in comparatively recent times, enlarged its junior-community college system, it might be well to look at what is meant by comprehensive post-secondary education, particularly as this applies to community colleges.

First, it will be helpful, possibly, if some basic positions, assumptions and definitions are presented. This will require a review of some basic philosophy as well. The speaker's own experience as an instructor, dean and president at three different public community colleges has been that the greatest number of difficulties exist within the house in attempting to expound the philosophy of the comprehensive community college to the academic faculty. A very preceptive and bright instructor friend, from years back, recently moved to a most important metropolitan multi-college district where the administration is steeped in and believes in comprehension and democratization. She wrote back in a personal letter, "Half the people working for this college are scared to death that it will do what is says it intends to do – serve everybody. The other half worries about how to make the students take off their hats off in the halls."

Definitions and Assumptions

First, the term *community college* refers to post-secondary institutions of higher education which otherwise might be known as junior colleges, technical institutes and two-year branches of universities. The term *community college* is generic.

Community. The community for any community college is usually thought of as being commuting distance. In reality this can mean a few downtown blocks in a densely populated urban area or it can mean a radius of a hundred miles in some sparsely populated region. Central has been a history of *not* being a residence college, and dormitories are not classically a part of a community college campus.

However, curriculum will not be limited to serve only the needs of an immediate community, as there is ample evidence of increasing mobility in the American population. Individuals trained in one area cannot be expected necessarily to remain in the area throughout their productive years.

As industry changes and the requirements of the personnel serving in industry change, frequent relocations, as well as retraining, are often required for substantial portions of the total labor force. Therefore, the word community is expanded increasingly to include regional, national and even world considerations -- such as training nurses, teacher aides and others to do social and missionary work – in private community colleges.

No community is isolated, nor is likely to be, from the main stream of national and world-wide social developments. The word community, therefore, takes the context of immediate social needs as they relate to the struggle of the individual to relate to his total society and to himself in a fashion defined by his society and himself as meaningful, productive, and worthy of dignity and respect. The interdependence of social events is seen nowhere more clearly than in a look at the enormous impact that seemingly unrelated social phenomena in the southern United States have had on the urban centers in the North and West as well as eastern United States.

The mechanization of agriculture in the United States had enormous effect of the "gang" type of rural agricultural workers in the southern United States during the early 1950's. Also influential was the considerable dislocation of peoples under war economy mobilization plans during World War II. Large numbers of people were brought from interior areas into war industries located in the North and on the West Coast of the United States.

Through war mobilization, economic opportunity elsewhere became known to people from the South through direct experience and by word-of-mouth. As increasingly large numbers of southern agricultural workers were denied the possibility of gainful employment, as a result of farm mechanization, they migrated North and West in enormous numbers to concentrate essentially in urban centers. This was, in fact, a massive human migration, one of the more significant in all American history, which occurred almost without attention. This migration subsequently gave rise to enormous social problems, most of which are yet unsolved.

It is estimated as many as eight million Negroes left the South during the fifteen year period from 1950 to 1965. It is also estimated that there will be another five million farm workers, mostly Negro, dislocated from the South in the immediate future. The harsh fact that the displaced farm worker had often been denied those educational skills which would have given them immediate marketability in the past in a traditional industrial society became even more painful when he was forced to attempt to adjust to rapid technological advances within a modern society.

Community colleges must anticipate that any immediate community can change in the next 20 years as drastically as some have in the last 20. Furthermore, there is every indication that American society will continue to urbanize with increasingly large percentages of the national population concentrated in urban areas. Given the unsolved social and personal problems now existing in the urban centers of this society, one can be certain that additional movement of inadequately trained people into urban centers, plus the normal increases of populations already residing there and offered minimal education, will bring enormous pressures on social institutions created by the American people to address the total needs of the American community. Moen and Stave alluded to this phenomenon at the conferences held here last year:[1]

> In all likelihood, many of these urban, youthful citizens will find themselves troubled by agrarian mores and puritan work ethics in a society in which character of labor is changing. Already sociologists point out that modern engineering is doing away with labor as a fact of life, except for the creative, and warn us to prepare for a future as consumers rather than as producers.

And this speaker wrote for another presentation:[2]

> Another consideration is the nearly bewildering pace of social change in recent years. This change can be attributed in great part to enormous population pressures and technological production processes which are mutually complicating. Moreover, social change is never complete in any large modern society instead, **pockets of people are left behind and isolated** by behavioral patterns inadequate to the altered situation. And though B. Lamar Johnson has documented the heartening ability of the two-year college to innovate and experiment, and Erwin Harlacher has described some significant community service programs, **there remain the enormous needs of the bypassed people**, which must be faced squarely.

The Community College

For the two-year college, the adequacy of the proud boast of being "the people's college" or of having an "open door" will be challenged totally in the immediate decades ahead. Relevant adult education will be clearly a continuing need and will exert accelerating pressures on community colleges to develop new curricula for adults while satisfying the pressures of providing for ever indreasing numbers of recent high school graduates. Further complicating things will be the widening spectrum of knowledge, skills, and abilities among products of high schools as these institutions accelerate and broaden their own offerings. For example, there will be functional illiterates graduated from high schools side by side with students in firm command of two languages. The final complication is that *neither* the functional illiterate *nor* the bi-lingual high school graduate can be assumed to be prepared for entrance directly into productive society.

Just what a two-year college is can be best answered by describing what it is that one does and is prepared to do in response to its community. Broadly, there would appear to be five general areas of responsibility as these relate to the curriculum:

1. The college will offer lower division university programs, usually two years in length. These will parallel those offerings found in the university at the freshman and sophomore levels.
2. It will offer courses geared towards imparting marketable skills for people not anticipating the university as an onward goal, but who aspire to enter the labor force at the conclusion of the training period.
3. It will offer college credit programs for adults, essentially of a dual character: (a) "upgrading" courses, such as, new math, navigation, etc., but concerned specifically with retraining adults seeking or forced into new areas of learning because of industrial shifts; and (b) the "interest" class, such as, painting and music.
4. It will offer community service programs through experiences not limited to the classroom and dedicated to the enrichment of personal and cultural lives of the individuals within the community in areas such as the performing arts, recreation, physical fitness, library services, etc.
5. It will offer a continuing counseling service responding tp the problems facing individuals seeking adjustment to a complex society which in presenting a richly diverse set of choices can, however, bewilder or lead to unrealistic or unfortunate decisions. This service will be geared to the fact that not all people adjust equally well to new social developments, and there will be increasing needs to structure and offer so called "repair" or "remedial" programs for people who have inadequately prepared in the past or who have been denied adequate training in terms of their abilities. The counseling function is multi-faceted, but will attempt at least to: (a) be distributive in the attempt to place the proper people in the proper programs at the proper time; and (b) be personal in that it will attempt to assist people who need help in assessing abilities, directions and the formulation of decisions pertinent to these assessments.

The properly functioning community college is a social laboratory geared to adult, post-secondary, occupational and higher educational needs of its constituents. As such it is reasonable that the college look also to the greater social laboratory -- its community -- for the implementation of certain programs by using existing facilities in the community. Similarly, college facilities would be as available to the community as is possible -- (for example,) the swimming pool, tennis courts, library services, or any other facility to the degree that the instructional program is not weakened.

It is the position of the community college that such a program of community involvement will have a positive effect of the immediate community in a sense of its identification with the college, and a positive effect of the college by allowing earlier development of some programs. The immediate effect can be the diversion of badly needed funds to programs which could not be housed in existing community facilities. A long-term benefit can be that the college could offer programs using more current equipment in some areas than it is likely to be able to afford or to keep current on through rotation.

This posture of the college in reality is an antithesis of the medieval university which walled itself in order to keep the community out. The community college, on the other hand, while not having to tear down walls, at least has not built any, and seeks actively to merge itself in the community and draw the community to the campus.

The extended day commitments

The college is committed to extending operations beyond "normal" 9:00 a.m. to

4:00 p.m. school operating hours, and to the principle that these "extended day" offerings will be of the same high quality and purpose as any other college curricular offering.

As the "entended day" program deals often with students who have interrupted the traditional sequence patterns, perhaps the best thing the evening program can do for a student is to inculcate in him the desire to initiate or to renew interest in learning through association with the college and then to keep on learning after getting from the college what is wanted. It is important to provide each student leaving a classroom with a desire to return and to equip him with the necessary knowledge and tools for a life of continuing education.

Objectives of the College

The community college then, is committed to help strengthen the democratic society by: (1) promoting educational experiences to aid the individual in the realization of personal goals; (2) serving the community by offering programs to meet the educational needs of the area, and (3) ensuring competency for entry into appropriate occupational fields. But so are a lot of other institutions. So what is "new" or "unique" about the community college.

What is meant by *unique* or *new*?

Another complication to be considered stems from the vary use of the terms *college* and *president*. These terms are not only woefully inadequate and misrepresentative, they are often very seductive in turning the two-year college towards previously existing forms of higher education. As a past president, the writer was painfully aware of the impact these words had on his own ego and on the practices of other two-year college presidents, such as inaugurations, etc. Gleazer wrote, in a not unrelated tone:[3]

> Say the word "college" and all parties within hearing will have a picture in their minds, but the odds are that the pictures will be more different than alike. This is not to say that the president's view is the only acceptable one or that it ought to be dominant, but it is the president's business to encourage the process by which a college, "self-concept" can emerge.

Basic *assumption*. The two-year college is unique as a form of higher education in the United States.

Social basis of the two-year college

The two-year college responds to different societal needs than other forms of higher education, but it responds to similar social aspirations. The two-year college has risen, in part, to serve areas of public interest and need which other institutions never approached or on which they defaulted through evolutionary change or through inadequacy.

What is meant by inadequacy of default should be made clear. American educational practices appear to be a continuous response to the basic national urge to create a universal educational system. This apparent hope of American society has been consistent with democratic theory and practice and is embraced by many citizens with near emotional fervor. It is a hope consistent also with an economic philosophy which expects production from all, but accepts the premise that further training, i.e., non-production, is an investment leading ultimately to greater or more efficient productive capacity for those educated or trained.

The result of this American ambition has been the repeated genesis of forms of public educational institutions aimed at serving *all* the people. This has been complicated in that just who were regarded as *people* at any one point in time varied. At different times different groups, usually ethnic minorities (though not always, as with the case of women) were excluded from the definition of *all* and excluded from the services the public provided through education.

Default is used to describe a condition where educational services of existing institutions are no longer adequate or pertinent to the needs, aspirations and numbers of the supporting society. Adequacy is always double-edged -- first in terms of ability to handle numbers and second in terms of ability to offer pertinent services to those handled.

Default, in the ability or will to serve *all* through existing educational systems -- because of the public emotionalism attached to the importance of education, creates enormous pressures. These pressures, unsatisfied over a period of time, support the genesis of new educational institutions.

The more significant American educational institutions to develop in modern times appear to have been: 1. the land grant colleges based on the Morrill Acts; 2. the American comprehensive high school (from the potential of the Kalamazoo Case, the great social pressures of demobilization following World War I, and the potential which came from passage of the Smith-Hughes Act in 1919 which yielded federal support for certain programs conducted within the new high schools); and 3. the American comprehensive two-year college which is still taking shape, but which has risen from demobilization pressure of World War II, continuing population pressures from an expanding population, the upward extension of educational strivings past the high school for increasing percentages of the population, *and* from the default of the existing institutions to cope with numbers of people and their desires.

Each of the new institutions to develop did *not* produce a universal form to supplant existing forms -- the land grant college did not replace private colleges and universities, but supplemented them. Each of the new forms of educational institutions could achieve significant social support originally simply by addressing needs created out of the limitations of the immediately preceding forms.

One of the more pervasive influences on each of the new forms of public education to emerge continues, and has relevance of unknown proportions for the two-year college. This is a process referred to here as the *university mentality*.

The university has had an enormous appeal to the middle class. The roots of this appeal are very deep in the modern American desire for upward social and economic mobility for their young. The university has often been the most available route to achieve this mobility for any one generation. This probably explains in part the great popularity of the university with the middle class.

The *university mentality* generates a most curious phenomenon when it comes to vocational technical education. Most people can talk about the great need for vocational technical education. To some, indeed, it has become the modern panacea for all educational and social ills, which, of course, it is not.

However, most people can talk about *vocational technical education* only *for other people's children -- the university is for their own children.* An anecdote drawn from personal experience may be helpful here:

> Shortly after my arrival as a community college president, a plumber came to my office to announce there was a local shortage of plumbers and, "Why th' hell aren't you training some!" I said, "Fine. When? Saturdays, Sundays, Christmas Eve?" We worked out Saturday morning as a good time, and then he said, "Who's going to teach the class? Don't want none of your eggheads doing it." I asked, "Who's the best plumber in town?" He answered, "I am." I said, "You're hired as the instructor!" As he turned to leave my office, I took a shot in the dark and asked, "By the way, what's your own son doing?" He turned with great pride and answered, "He's in medicine at the university." I couldn't resist the obvious, and came back with, "That's why th' hell you haven't got enough plumbers!"

Because of parental aspirations for the university and their own children, the university has never been adequate to handle *all* who desire it. Indeed it does not now, never has and probably never should aspire to handle *all*. The point is that as more and more people sought the services of the university with increasing numbers of aspirants necessarily frustrated, new pseudo-university systems were created from the social pressures rising from unmet needs. By this is meant that as larger numbers of people were denied entrance into the university, not only were new educational systems encouraged, but they were also perverted from original intent to become something like a university. The effect of these pressures are seen nowhere more clearly than with Western land-grant colleges where one now often hears the proud boast they have arrived as "major" universities or as "the Harvard of the West!" Involved is admission of a complete shift from original emphasis or agricultural and mechanical programs which were the raison d'etre of the land grant colleges. Simultaneously there is the creation, through default, of a need for a new type of educational institution to serve needs being ignored or recently brought to light through social or technical changes.

The problem now becomes how best to protect the new college from becoming another pseudo-university, as it has been seen that there is much more to a two-year college than serving as a junior-university. The university mentality is most pervasive, however, and it will remain to be seen if the two-year college can resist it, when proper to do so.

The two-year college administration has deep roots in public school practices, specifically those of secondary or high school education. This was observed by Angell in 1915,[4] and it continues.[5]

As noted earlier, the practice of two-year colleges of inviting business and industry to participate on advisory committees and to plan programs can be regarded as the antithesis of the American university still steeped in the Anglo-Germanic tradition of walling in the university to keep the community out. Though there are still reasons why the university might well tend to its walls (the role of social change agent requires the university to transmit knowledge to *preserve* society while simultaneously advancing knowledge which will *change* society), the community college administrators are faced directly with pressures their university or four-year college counterparts rarely experience.

The two-year college president is expected, for example, to defend academic freedom and other hallowed rights from those in-roads traditionally rising from the community, but he must do so without the benefit of walls or distance. And though O'Connell,[6] as with others, suggested the two-year college president has a position *not* unlike that of the four-year college or university, this paper places great emphasis on the assumption that the position is as different from the four-year or university president as the two-year college is different.

Though the two-year college is marked by wide differences in practices when any one college is compared with any other, it is assumed that commonalities of practices and function can be deduced and studied to lead to workable and useful generalizations.

The wide variation found among two-year colleges should *not* be regarded as reason to abandon a search for commonalities of practices and functions.

It is not possible to prepare potential teachers for every child time and situation but this does not lead to an abandonment of teacher preparation programs. The wide variation found gives strength and credence to the claim that the community colleges can be comprehensive institutions.

This college makes other claims relative to functions, such as maintaining an "open door" or being teaching-oriented rather than research-oriented All such claims are fine so long as they focus on essential purposes – the education of students.

Writing from the perspective of the business world, Spencer noted:[7]

> The schools, in brief, seem to be interested in teaching everything except students. The emphasis is on subjects, not

> people, and the principal measurement of the effort is not whether this student emerged from his educational program as a potentially successful adult, but whether he satisfied the degree or diploma requirements.
>
> Yet, it is apparent that millions of students march to a different drummer...not out of a desire to be different, a refusal to conform, but because our schools and colleges do not serve their needs.
>
> The junior colleges seem to me to offer our best chance to stimulate genuinely fresh investigations, and then do something about the answers. Free of the rigid traditions which tie most schools and senior colleges to their administrative and instructional arrangements, junior colleges can tinker with all sorts of new ideas and put them to work in their classrooms.

However, Cohen and Rouche were pointed in the observation that talking about "teaching" and demonstrating that learning occurs, might be two different things:[8]

> Suppose group goals in a junior college centered around the single statement, "to cause student learning." Immediately the situation would change. The leader of such a group would arrange situations in which objectives were carefully defined, instructional sequences plotted, and evidence of learning gathered. He and his institution would accept accountability for student learning and see themselves as successful only to the extent they brought it about. All dimensions of the college would be pointed toward demonstrable educational ends.

A Definition of Comprehensiveness

Reduced to essentials, a *comprehensive* program assesses the abilities, aspirations, motivations, and resources of an individual, places him in a training program at an appropriate entry level and retains him in the training program so long as he is able to profit from the educational experiences offered. For example, a comprehensive agricultural program could extend from teaching people how to drive a tractor (displaced farm "stoop laborers") to how to design a better tractor (mechanical engineering). Further, *any individual should be able to proceed through the entire breadth of a comprehensive program.* Equally important, but more difficult to achieve, is to successfully counsel the student aspiring to be a mechanical engineer who cannot pass calculus into other areas offering him greater chances for success.

Comprehensive occupational programs are best served by comprehensive communication and general educational offerings. For example, it can be meaningless to teach a foreigner English if he cannot read his own language. Just as many native-born Americans do not know all English words, to teach a Mexican-American from a bilingual background that certain words in English mean certain words in Spanish is to assume he knows what the Spanish word means, which may not be the case. A comprehensive communication skills program may, therefore, teach Spanish to Mexican-Americans, if this is needed, in the effort to teach English.

CONCLUSION

Comprehensiveness ultimately refers to an approach to students wherein they are dignified as individuals and whereby learning on their part is accomplished. Brawer has noted:[9]

> Since the primary purpose of education is to cause learning and the primary purpose of the community college it to teach, there

> must be a direct relationship between teaching and learning. The process of establishing this relationship lies largely with the college president.

And Cohen and Rouche stressed this again:[10]

> If public community colleges are to be the major hope for the future of American higher education, and if universities are to be following the innovative developments of the two-year college in the next five years, new leadership must be developed – leadership that will provide the impetus for educational change resulting in improved practice. Those responsible for shaping and implementing educational policies must ultimately accept responsibility for the success or failure of the two-year college in effectively serving the society that created and nourished it.

Finally, the effectiveness of a community college is measured inevitably and properly by the society providing the wealth with which to operate. Society has been promised results from its investments – that it expects these promises to be achieved is reasonable and proper.

It may be best to end here, as I did at another conference, with this remark:[11]

> We can still succeed in meeting this expectation. We will do so only if we *keep the last man in line clearly in focus.* This may be a student who dropped out of high school and for whom the university offers nothing. He may have been in reform school twice, in and out of a couple of federally supported work-related programs, and he may not really want to be helped at all. However, if we lose sight of him, we may miss the opportunity to help when help is wanted. We have told our supporting society that we are the "peoples' college" – this would seem to say we mean to help anyone. We have given hope to many people. To achieve promises requires dedication to and respect for people, including *a commitment to "the last man in line."*

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TOWARD A SYSTEM OF HIGHER EDUCATION

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What I want to do is think with you a bit about the difficulties we face in trying to weld together a system of higher education out of several parts. In particular, I want to examine the relation between the junior colleges and the university.

I will try to carry out this examination from the point of view of the only essential ingredient of the higher education system, the faculty. Consequently, you will notice in the remarks which follow that I am not paying respectful attention to the formal statements from our institutions of higher education by chief administrative officers, boards of trustees, coordinating commissions and the like. I applaud all such statements; in fact, I have never seen one with which I disagreed. But neither have I seen one that, in an operational sense, did any good. My concern is with *doing* something, and hence I focus my attention on the faculty.

For the first part of my remarks I will try to capture the view of university faculty of the present relationships between the university and the junior colleges. I choose this vantage point only because it is the only view from which I am, by my experience, entitled to speak. I must leave the view by junior college faculty of the present relationship between junior colleges and the university to you. I believe, whether from your point of view or from mine, that such an analysis will uncover the central difficulty of constructing a system of higher education from the present series of baronial fiefdoms dealing in a common commodity, the students.

I realize full well the risk I take in constructing the analysis around the views of university faculty. There is, in the common wisdom, the view that the university – its faculty – can speak with authority on a wide range of educational matters and you may well be put off by so unjustified a view. I do believe that universities must meet a major responsibility for leadership in education. I also know the shortcomings of universities well enough to know that the view from Olympus is more often than not obscured by fog and that often the only contact with the outside world is through the steady flow of students scrambling up to us through the curtain of fog.

After I have characterized the view from Olympus of the junior college, the picture will emerge of a system of higher education with important impedance mismatches between the several parts. My own belief will emerge that, in spite of formidable problems, the hope of accommodation rests primarily with the faculties of higher education.

From this view of the problem I will move to a description, in some detail, of one mechanism, well tested, but seldom used in higher education for helping the parts of higher education comprehend one another.

The View from Olympus

While I cannot presume to speak from the point of view of more than one faculty member, indeed I must. I am willing to try to capture a semblance of a university faculty member's view of the junior college if you will agree not to require me to defend it as my own. I will look in turn at students, then faculty then the institution.

A. The junior college student as seen when he becomes a university student.

I suspect there is no faculty member who in trying to help a student in one of his courses, does not remember a few particularly grim instances from which the diagnosis – agreed to by student and faculty member alike -- was the inadequate preparation of the student in his junior college preparatory work. Whether or not there is any validity to the diagnosis, it is a part of the common wisdom that the source of difficulty was the junior college work. Unnoticed are all the junior college transfers who prosper and all the "regular" university students who founder.

It might be instructive to take a look at some data from a typical institution. Since we are concerned here with science and technical education I collected some information from the Institute of Technology which, as you know houses the departments of physical sciences, mathematics, and engineering of the University I.T. has a fairly constant undergraduate enrollment of approximately 3500. Annually it admits about 850 students directly from high school. It admits about 100 advanced-standing students from other parts of the University and between 250 and 280 advanced-standing students from institutions. In spite of the fact that our junior college system, as a system, has had only a short history about 80 students per year transfer to the University after some work in a junior college. Thus, of the approximately 1200 new students per year in this college,about six percent of them come from junior colleges. These numbers are, of course, growing and may be somewhat larger for the present academic year for which I do not have figures.

It is well worthwhile to look at their progress after transfer. Typically the grade point average of a transfer student falls significantly after transfer. That is, his grade point average at his beginning college is significantly higher than the grade point average earned in his first year of work in I.T. By contrast, the grade point average of a "regular" student in I.T. rises as time goes on (Thus, the G.P.A. for all students during each of the years, freshman through senior, rises in the progression: 2.18→ 2.20→ 2.52→ 2.65.)

For example, the grade point average of a transfer from a state four-year college falls by 0.5 to 0.6 on a four-point scale (1964-65: 2.81 to 2.28; 1965 66: 2.76 to 2.15; 1966-67: 2.58 to 2.03). The grade point average of a transfer from a private four-year college falls by 0.1 to 0.2 (1964-65: 2.59 to 2.39; 1965-66: 2.44 to 2.31; 1966-67: 2.55 to 2.50). The grade point average of a transfer from a junior college falls by 0.3 to 0.5 (1964-65: 2.64 to 2.14; 1965-66: 2.70 to 2.20; 1966 67: 2.70 to 2.37). Thus, the junior college transfer is very similar to the transfer from the four-year state college. While the transfer shock is significant (the precise reasons for it are by no means clear) it is not, in general, a disaster as the following measure indicates.

Of the about 560 bachelor's degrees conferred annually by I.T., 31% are received by students who transferred a fraction of their work from another institution. (Remember that 1/3 of the students enter with advanced standing from other institutions). Further, 8% of graduating students began their work in junior colleges. Remember that 6% of all students entering this college began their work at junior colleges.

These numbers are not at all discouraging: junior college transfers do slump after transfer, but while 6% of entering students are junior college transfers, 8% of graduating seniors are junior college transfers.

There are, however, some dark clouds. If one looks at junior college students who spend a full two years at the junior college before transfer, about 60% get degrees from I.T.; of students who complete their lower division work in I.T., about 80% complete the degree. Thus, there is convincing evidence that starting college work at a junior college is in itself not a handicap in completing a full four-year college degree, but that the difficulties are greater for those students who remain at the junior college for a full two years.

To return to our typical university faculty member, the point I make with this discussion is simply this: almost the only information a faculty member has of the junior college is through casual interaction with students who come to him from the junior college. The evidence is that such students fare better than he would have supposed, but certainly not so well that we can be sanguine with the result.

B. The Junior College Faculty as Viewed from Olympus.

Without question the university faculty views the junior college faculty as a part of that group of well-intentioned teachers who struggle manfully with American children, grades K through 14. The evidence on which this conjecture is based is usually anecdotal: many know of the high school science teacher who was promoted from "teach" to professor (in many cases a serious loss to the high school program). The contact of university faculty with junior college faculty is almost never at what he considers to be a professional level, and occurs only when he ventures where the spectrum of science teachers includes high school teachers.

The national data, in a particular way support these feelings: 6.1% of junior college science teachers who teach only one science hold a subject-matter doctorate; 49% hold a subject-matter master's degree; and 10.8% hold a subject-matter bachelor's degree *(The Junior College and Education in the Sciences,* a report prepared by the N.S.F. for the H.R. Subcommittee on Science, Research and Development). I strongly suspect that there are large variations from these averages across the country (the percents being raised by the California program).

The point I am making with these impressions and data is simply this: the university science faculty member understands clearly only one degree--the highest in his subject-matter area. He makes substantially no contribution to graduate education outside his and closely allied subject-matter areas -- seldom to education graduate degrees -- and regards bachelor's and master's degrees in his area only as steps to the ultimate degree. Consequently, he is likely to identify professionally with, at most, 6% of the junior college faculty. The irrelevance of this attitude is not likely to be his first conclusion if he has occasion to think on this problem.

C. The View from Olympus of the Junior College as an Institution.

The common wisdom among university faculty is that the junior colleges are A GOOD THING. The reason for this feeling is not hard to find. The near realization since World War II of the American ideal of educational opportunity, consistent with ability, for all American youngsters has provided all established universities with more than enough students. The development of junior colleges to share the screening process for higher education has been welcomed. Further, since no junior college aspires to competition in programs with universities, it has been easier to support the junior college movement than to support the programs of ambitious four-year colleges.

The well-read university faculty member knows of the three general programs of the junior colleges:

1. Lower Division work for transfer to four-year programs.

   Through his work with transfer students, he has a general appreciation for and is vaguely ill-at-ease with this function as discussed above.

2. Two-year (terminal) Liberal Arts education.

   He endorses such efforts to raise the general cultural level of the country, but seldom sees the obvious parallels between such efforts and the courses offered in his own department as service courses for students required to satisfy a distribution requirement for the bachelor's degree.

3. Vocational education.

   He endorses any attempt to provide training in support of the economy in which he is embedded, but sees little relation between his work and such programs. That the science he loves is a major contributor to the technology which creates the needs for a vital and rapidly changing vocational education program has not affected his behavior in any important way (except in some areas of medical education).

I should not leave you with the impression that I am unaware of other channels of communication among faculties. I am, for example, painfully aware that the published catalogues of universities are used in the design of courses in institutions whose students may transfer to the university. I am also well aware of how little our published documents successfully communicate to our own students and faculties.

I am aware of efforts to provide uniformity in course content. The major attention textbook publishers pay university faculty is in part a reflection of the number of students we teach directly and in part a reflection of the number of students at other institutions whose textbooks we are also indirectly selecting. The well-meaning mistakes we make in text selection have ripples across the land.

I am aware of efforts by university departments to provide guides of course standards through the distribution of examinations given in some courses to interested faculty at other institutions. It is not clear what value these exchanges have. To unravel a course from a study of the final exam must be equivalent in difficulty to understanding statistical thermodynmaics from the inscription on Boltzmann's tomb.

I am aware of efforts of the several parts of higher education to coordinate programs. For example, a comfortable number of coordinating conferences bring together administrative officers of state junior and four-year colleges to learn details of changes in curricula and course content announced by the university The most important information transmitted usually is reduced to small whole numbers and the ensuing discussion is concerned with what the university will do with transfer students who do not satisfy the new standards after the announced deadline two years hence.

And finally, I am aware of the efforts of the visiting university evaluation team whose report to accept the credits of new institution X is perfunctorily accepted by the faculty senate. I am also aware of the feeling of impotence and irrelevance of the faculty members serving on such visiting teams.

The circumstances I describe, only occasionally with tongue-in-cheek, describe almost perfectly a classic case of a system with important impedance mismatch at a crucial junction. And it presnets to the system a major problem.

The Problem

The problem, to me, is as follows. I cannot conceive of a successful system of education which does not permit easy access at all levels to the best guidance available from the universities. There are two fundamental arguments in support of this belief. (1) To the extent that university faculty carry the responsibility for the articulation of the best that is known, they bear the responsibility for the dissemination to *all* levels of the educational system. Not to feed back our finest results of scholarship to all levels of learning is a sterile distortion of the meaning of scholarship. (2) The simple practical problems created for students who are, after all, the point of the system of higher education by the impedance mismatch between the universities and the other components of the system works to the disadvantage of all.

It is clear that an easy interaction between faculties of the several components of higher education is required; and it is equally clear that the mechanisms for this interaction do not now exist.

Toward an Accommodation

I believe it is quite clear what our objectives must be in order to effect the impedance match between the universities and the other levels of the educational system. We must devise, under whatever pretense, a working relationship between individuals responsible for instruction. The key words in this charge are "working relationship." By this phrase I mean a relationship,

. . . based on a common interest,

. . . to which all individuals bring some relevant expertness,

. . . from which all participants can emerge enriched by the experience.

We have now, in operation, a number of national programs, many of which are supported by the N.S.F., which have elements of this relationship.

The research participation programs certainly have the ingredients of a working relationship. But such programs cannot be considered appropriate for more than a small minority of junior and four-year college faculty if only because by their choice of vocation, discipline-oriented research is not their primary stimulant.

The many summer institutes, short courses, and academic year institutes surely have an important function, but seldom, by their nature, can they generate a spirit of joint enterprise.

Without deflecting such programs from their worthy course, we need additional efforts to which participating university faculty and junior college faculty come with separate, but relevant talents, knowledge, and experience to attack, as peers, problems of common interest. The problems to be attacked are not hard to find. They reside with the introductory courses in science and mathematics for the potential scientist and engineer; they reside in the courses in science and mathematics for the non-specialist student; they reside in the technologically oriented vocational courses; they reside in the virgin land of application of film and tape and computer to science and mathematics instruction they reside in the stimulation and use of research in developmental and social psychology to the improvement of learning and teaching.

There is abundant evidence that from the marvelous collaborative efforts, mostly to this time at the elementary and secondary level, to improve materials for science and mathematics instruction have come the kinds of collective understanding -- the impedance match -- of which I speak.

Let me give a small example. Most of us in physics will agree to dissatisfaction with the results of our efforts to teach rotational motion in a beginning classical mechanics course. Following an effort in which I brought my best professorial talents to bear on the fundamentals of the problem, I can report that given the choice of conserving angular momentum or kinetic energy of an isloated system, seven out of ten students will go for kinetic energy. I rather doubt that the results are much better in most similar courses. Surely, a serious effort by a group of faculty from the several areas of higher education could provide materials superior to those now available. In the process of this joint venture, I dare say the junior college faculty member would have occasion to learn some things about rigid body mechanics from his university colleague and the university faculty member would gain insights into the undergraduate mind from his more experienced junior college colleague. The two might well have the courage to invite the collaboration of a specialist in the psychology of learning. Obviously by such collaborative efforts, the disjuncture between junior college and university would diminish; the experience, now nearly nonexistent, would begin to permit the development of sensible and meaningful graduate programs at the university from which new junior college faculty would eventurally emerge.

Do not misunderstand my use of such an example. I have no illusions that from the development of such a small piece of material will follow directly the solution to general problems of higher education. But I am sure that each of us in this room could immediately outline five educational tasks which beg for solution and I do maintain that in the resulting activity are the dormant seeds of solution to the more important problems.

I do not claim uniqueness for this route to solution. Sad as it may be, the search at the moment is for theorems establishing the existence of solutions. Discussions of uniqueness of solution have no place in our present struggle toward accommodation.

If there is merit to these ideas, there is a necessary change in some of the ways by which higher education is to be supported. I am concerned with changes in the view of higher education faculty of their responsibilities and I propose these changes through the mechanism of projects for the improvement of educational materials and techniques. To effect the revolution will require basic changes within the institutions. By our out-dated procedures of incremental budgeting, it is virtually impossible to turn on major continuing programs without external help. Help is required in two areas: major money is required for the development of laboratories, shops, film and TV studios, and computer facilities to support the activities of educational research and development. While I believe these facilities must be associated with the universities, I believe they should be disigned, administered and operated to be accessible, as a right, to faculty from other institutions of higher education. Secondly major resources must be made available by which faculty educational leaders can engage in the activity in educational development required. If we are to be serious in our belief that cooperative faculty efforts are a necessary (but not sufficient) ingredient to the solution of the systematic problems, then it is time that we seek out as a matter of general policy the means to support their efforts.

I know of three existing or planned programs within the State of Minnesota which represent important first steps in this direction which I would like to mention.

A. Interinstitutional Development of Educational Uses of Television. The 1967 Legislature provided support through the Higher Education Coordinating Commission for the systematic development of the use of television in Minnesota institutions. In addition to providing for facilities in selected centers scattered around the state, modest provision has been made for joint development efforts by faculties of public and private institutions. There is good reason to believe this program will be systematically expanded over the next few years.

B. N.S.F. Program for Interinstitutional Educational Development in the Sciences. An imaginative N.S.F. program encourages educational development work between two-year college faculties and university faculty. We will very likely have such a program in operation beginning this summer between junior college physics faculty and some of my physics colleagues at the University. I hope to see parallel efforts develop in the other natural sciences and the social sciences over the next few years.

C. State of Minnesota Program for Interinstitutional Curriculum Development. If the 1969 Legislature is able to support a special request attached to the proposed University budget, we will be able to announce a general program under thwich higher education faculty in the state can join in major efforts to solve some of their common educational problems. It is, unfortunately, premature to lay specific plans, but I hope that by the time of the next series of Minnesota junior College Faculty Conferences we can hear reports on the progress of projects supported under this program.

Conclusion

Let me summarize what I have been saying in the following manner.

I am very much an operationalist. Therefore, let me give you five operational criteria which I believe should be applied in evaluating any serious effort to get at the problems of higher education.

I will judge that higher education is moving toward profound solutions when any or all of the following five objectives move from the barely discernible to the readily observable.

1. We can expect progress when we observe the regular and detailed involvement of the discipline-oriented research scholar in the problems of education.

   The top of our educational system continues to tolerate the circumstances whereby most of the discernible pressures on university faculty to excel and most of the rewards for excellence are directed outward from the needs of education to the demanding taskmasters of discipline and profession. It is a false image of the present university professor which does not recognize the enormous satisfactions realized from the international community of scholars in his discipline and it is a serious mistake to underestimate the effects resulting from the fact that almost all funds supporting the work for which he receives recognition come from the outside. A major taks before higher education is to discover mechanisms and resources to turn a noticeable fraction of the creative energy of a faculty inward to the problems of education.

2. We can expect progress when we observe a fraction of graduate programs turn from a sole concern with the development of the discipline to problems of education research and development.

   We are evidently trapped by our rhetoric of what constitutes scholarly work as a training ground for graduate students in the disciplines. In fact, a noticeable fraction of Ph.D. theses in the sciences are an important and useful recasting of old ideas for the education of other scholars in the field. It seems to me not a major deflection from high purpose to broaden this procedure to include recasting of old ideas for the education of those other than scholars in the field - for example, elementary and secondary school youngsters and college undergraduates.

3. We can expect progress when we observe the direct and important use of the research results of social and developmental psychologists in the design of instruction.

   The isolation of learning theorists from the practical realities of instruction has impoverished instruction and delimited opportunities for research in this field. To the extent that a productive collaboration is developed between experts in learning and the amateurs who teach will we begin to understand why the ideas we cherish and find so beautifully simple are so hard for students to understand.

4. We can expect progress when we observe the development of educational leadership in the schools and undergraduate colleges.

   Until the time that major decisions on curriculum, course contect and educational objectives can be made with significant contributions from all levels of the educational system and to the general satisfaction of the educational practitioners at all levels, the basic decision will be made from the top. My major thesis throughout this paper has been that the problems are much too difficult to tolerate reliance on the judgment and knowledge of so narrowly selected a group. It will only be by the development of a profound respect for intellectual achievement, broadly defined, that the potential for educational leadership in our schools and colleges can be exploited.

5. We can expect progress when we observe facilities and support for the regular and systematic improvement of instruction as a legitimate and on-going responsibility of all faculties of higher education.

   It is at this point that I urge that we begin.

There are, without doubt, an enormous number of symptomatic problems across the educational system: teacher education, continuing teacher education, the transfer student, research in learning and teaching, long-range planning, accreditation on and on. But until the men and women who make up our educational institutions can discover a vital intellectual unity to their effort, the symptoms will persist. A likely candidate – my favorite -- for this intellectual unity is a joint and continuing effort in research and development of curricular and course materials. The seeds for such a program are already germinating. A little warm sun and some green rain could well produce the spirit of an intellectual community so desperately needed across higher education.

John W. Gardner has a way of finding the right words to express my thoughts. In one of his books he quotes William Hazlitt: "Man is the only animal that laughs and weeps; for he is the only animal that is struck with the difference between what things are and what they ought to be." It doesn't take much of an observer to see where we are in American higher education; nor does it take much of a prophet to see where we might be. But we do need some men and resources to take the small steps that immediately and obviously can move us toward where we ought to be.

SPEAKERS AND RESOURCE PERSONS

Douglas H. Anderson, Assistant Professor of Educational Psychology, College of Education, University of Minnesota

Mason R. Boudrye, Minnemath, University of Minnesota

F. E. Christensen, Physics, Saint Olaf College

Clifford Creswell, Hamline University

J. Thomas Head, Chemistry, Hamline

Neal C. Nickerson, Assistant Professor of Educational Administration, College of Education, University of Minnesota

Olaf Runquist, Chemistry, Hamline University

Carroll I. Stein, Management Psychologist, Foshay Tower, Minneapolis

THE DISCUSSION GROUPS

GROUP LEADERS AND RECORDERS

Discussion Group I: Innovations with Computers

Norman S. Holte
Bethany Lutheran College, Leader

Sister Loretta Klinkhammer
Rochester State Junior College, Recorder

Discussion Group II: Innovations with Equipment and Supplies

William B. Oatey
Brainerd State Junior College, Leader

Katherine Tomsich
Anoka-Ramdey State Junior College, Recorder

Discussion Group III: Innovations with Films

Arland W. Otte
Normandale State Junior College, Leader (Monday)

Roderick McKeag
Fergus Falls State Junior College, Leader (Tuesday)

Janis P. Ephraim
Metropolitan State Junior College, Recorder

Discussion Group IV: Innovations with Audio-Tutorial Systems

Curtis Austin
Anoka-Ramsey State Junior College, Leader

Gloria Cruze
St. Mary's Junior College, Recorder

Discussion Group V: Innovations with Students

Richard L. Portmann
Fergus Falls State Junior College, Leader

Charles A. Sigmund
North Hennepin State Junior College, Recorder

THE DISCUSSION

The faculty representatives attending this conference gave their attention to three broad subjects: present innovations in science instruction, the conditions necessary to make more extensive innovation possible, and the place of vocational education in Minnesota junior colleges.

Given such factors as equipment costs, schedule complications, enrollment pressures, faculty loads, and students ranging very widely in ability, it is not surprising that many of the faculty members attending this conference were greatly interested in talking about innovative laboratory instruction in the physical and biological sciences.

The ideal, in spite of great obstacles, is to reduce lecturing, eliminate "cookbook" exercises, utilize recent technological developments, and increase direct student-faculty contact. Experiments involving use of video-tapes and closed circuit TV were described

The purpose in each instance was to utilize the full potential of the media instead of focusing only on the blackboard and the face of the instructor. Open laboratories staffed by faculty and assistants and featuring audio visual-tutorial equipment were described. Examples cited included Southwest State College at Marshall, the General College at the University of Minnesota, and Meramec Community College in St. Louis.

One institution reported initiating a block project laboratory system which permits students to work at their own convenience and at their own rates of speed. Enrollments in beginning chemistry and organic chemistry doubled after this change was made.

Instruction on many campuses is both facilitated and expedited by means of a wide variety of visual aids. Overhead projectors can readily be used to implement innovative teaching techniques. Sample copy books can be a source of transparancies, color overlays, and color lifts. Film loops, single-concept films, and video-tapes are becoming commonplace. Anoka-Ramsey proposes to keep materials of this kind in its library available for out-of-class viewing and study. Credit by examination was urged as being a convenient way, especially in science and mathematics, to match student and level of instruction.

Auto-tutorial laboratories in biological science aroused much interest. In one institution, background information relating to topics being discussed in lectures is put on tape, with instructions. Students listen and re-play as often as necessary to understand the material. The audio portion of this self-teaching laboratory frequently is reinforced by 8mm film loops. The tapes usually run from 30 to 45, but laboratory exercises require two hours because the students must turn away from time to time to carry out experiments or examine demonstrations.

One basic advantage of all this is that the student has access to information about a given topic when he needs it and in a laboratory environment. On the other hand, it should be noted that auto-tutorial laboratories are not time-savers. In fact, they absorb more student and faculty hours than conventional laboratories. But they do maximize student participation in the learning process, and they are a very effective means of presenting certain kinds of materials.

Innovation and general improvement of instruction are not impeded in Minnesota by faculty ignorance or indifference, said the conferees. While high enrollments, too rigid schedules, and equipment lacks often pose real problems, *time* is still the essential commodity. Innovations are not work reducers for the faculty. Instructors need *time* to conceptualize and develop innovative techniques. Departing from the traditional or the conventional requires additional hours for class preparation.

Innovation can promote flexibility and efficiency. Conceivably, it can result in reducing the number of college drop-outs and increasing the proportion of successful transfers and degree candidates. If this be true, the conferees suggested that the Minnesota State Junior College System might well be justified in budgeting time and money for innovation, particularly in the area of instructional innovation. For example, a line item could be included in the budget of every junior college to fund proposals submitted by individual instructors, administrators, and/or students. Faculty contracts might well be re-drawn to encourage released time for study or experimentation testing innovations in curriculum and instruction or in the realm of procedural, administrative, or policy matters. From time to time, for example, six hours of an instructor's load could be allocated to course development. As things are now excessive part-time staffing and heavy teaching loads characterized by too many different preparations are barriers to innovation.

Innovation, these faculty members declared, should be fostered by observance of certain principles, such as these:

1. Innovation and experimentation should be recognized, promoted and rewarded by administrators, advisory committees, the chancellor of the Minnesota System, and the Minnesota State Junior College Board.

2. The purpose of experimentation and innovation should be to improve

teaching and learning, *not* to increase student-faculty ratio or FTE.

3. Planning and implementing experimentation and innovation should be preceded by careful and precise study.
4. Experimentation and innovation should stem from and take account of the characteristics and needs of junior college students, therefore, the central office of the Minnesota System should undertake to assemble and disseminate student data which is current, accurate, and descriptive.
5. Funds to facilitate experimentation and innovation from state and federal sources should be sought and coordinated by a full-time staff member in the central office of the System.
6. Materials resulting from experimentation and innovation such as programs, tapes, and auto-tutorial “software” should be placed in a central collection and made available for circulation throughout the System.

The faculty representatives attending this conference viewed innovation through student eyes. For some students, experiment consists not in new or novel approaches to subject-matter or classroom procedure, but in the simple act of enrolling for a course of study in an untried, unfamiliar, perhaps faintly forbidding subject-matter field. Most faculty agree that this kind of academic adventuring should be encouraged. Exploration can lead to self-discovery. But the conferees felt that the grading system presently in vogue, bristling with “D s”, “F s”, “W’s”, “WF s”, and the like, discourages many students from venturing beyond familiar, tested grounds.

The grading system, they said, also needs to be reconsidered in the light of the needs of those needing what are variously called high school equivalent courses, remedial education, compensatory education or a developmental curriculum including tutorials and training in study skills. For such, perhaps a pass/fail should be substituted for the A-F scale.

Accordingly, one discussion group dealt with the topic of innovation by creating a new grading system. Under this plan student work would be evaluated along a four-division continuum:

A = distinguished performance
B = high accomplishment
C = passing work
D = sub-standard work
I = incomplete

No “F” would be given under this plan. Students turning in unacceptable work simply would receive no credit for the course. The incomplete would continue to be awarded under conditions described in the current handbook Grades of “W”, “WP”, and “WF ’ would be eliminated. The present grade point system would remain in effect. If circumstances indicate that a “D ’ would serve a useful purpose, student and instructor may mutually agree that it should be awarded.

In addition, the plan provides that the instructor should give students general information about the quality of their work at the end of the quarter. At that time the students would have the option of deciding to take no credit in lieu of a course grade. Those choosing not to accept credit would be allowed to repeat the course until achieving a grade. The only time a course would be listed on an official transcript would be when he receives a grade he wants in the course. Re-registering for a given course would be limited only by the time, money, and effort a student wishes to expend.

This was a conference of vocational education specialists as well as of instructors in mathematics and natural science. Those interested in occupational education discussed the tensions and opposing views often bearing such labels as community college, junior college, area vocational school, transfer programs, career programs, transfer programs, terminal programs, theory, practice.

In some of its broader aspects, this kind of debate which turns upon the appropriate goals of higher education originated with the Greeks and has continued ever since to echo down the corridors of time. The fact that the issues never are fully resolved only adds to such worries as potential rivalry among junior colleges and area vocational schools for students, money, equipment, facilities, transfer of credit, and community approbation.

The Minnesota situation and the general issues were canvassed at this conference. No recommendations or statements of principle were announced, but discussions such as this one are necessary preliminaries to the resolution of the problem which ultimately will come.

Registrants

Bruce L. Anderson
Mathematics
Rainy River State Junior College

Raymond Appel
Natural Science
Lakewood State Junior College

Ann Appert
Nursing
Anoka-Ramsey State Junior College

Curtis Austin
Electronic Engineering Technology
Anoka-Ramsey State Junior College

Loren Baumbach
Natural Science
Worthington State Junior College

Norman R. Becker
Chemistry
Worthington State Junior College

William Benson
Physics
Willmar State Junior College

Russell R. Blankenfeld
Mathematics
Rochester State Junior College

L. James Bressler
Engineering Graphics and Drawing
Hibbing State Junior College

Roger D. Briest
Office Education
Normandale State Junior College

Dale R. Carlson
Biology
Worthington State Junior College

John Champlin
Electronics, Mathematics, Physics
Rochester State Junior College

Jean M. Clark
Coordinator of Office Part Time Training Program, Secretarial
Austin State Junior College

Clinton Crosby
Physics
Bethany Lutheran College

Gloria Cruze
Nursing
St. Mary's Junior College

Ellen L. DeGeus
Business, Secretarial
Metropolitan State Junior College

L. E. Eichman
Adult Education
Itasca State Junior College

Dominic Elioff
Business Education
Mesabi State Junior College

Janis P. Ephraim
Natural Science, Biology
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James R. Erickson
Biological Science
Normandale State Junior College

Peter E. Fossum
Physics
Golden Valley Lutheran College

LeRoy E. Gilbertson
Chemistry, Biology
Austin State Junior College

Robert Glaser
Geology, Astronomy, Chemistry
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Lyle Gleesing
Mathematics
Itasca State Junior College

Louise M. Heine
Biology, Physical Science
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Donald W. Holman
Chemistry, Physical Science
Willmar State Junior College

Norman S. Holte
Academic Dean
Bethany Lutheran College

Cris L. Huber
Dean of Instruction
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Niles Jefferson
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General College
University of Minnesota

Allen Johnson
Geology
General College
University of Minnesota

John Kobe
Marketing
North Hennepin State Junior College

Richard N. Kohlhase
Dean of Instruction
Mesabi State Junior College

John Kramer
Mathematics
Northland State Junior College

Roger Larson
Business Studies
General College
University of Minnesota

H. Philip Lippert
Mathematics
Austin State Junior College

Valerie Liston
Biology, Ecology
General College
University of Minnesota

Morris Marcohe
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Worthington State Junior College

Elmer Mattila
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Metropolitan State Junior College

Roderick McKeag
Biology, Organic Chemistry
Fergus Falls State Junior College

Wayne A. Meisner
Marketing
Rochester State Junior College

Louis Mendel
Economics, Accounting
Austin State Junior College

Gary Norton
Chemistry
Mesabi State Junior College

William B. Oatey
Physics
Brainerd State Junior College

Arland W. Otte
Dean of Instruction
Normandale State Junior College

John Peltzer
Natural Science
St. Mary's Junior College

Glen Peppel
Physical Education, Biology Laboratory Assistant
Brainerd State Junior College

Richard L. Portmann
General Biology, Human Anatomy and Physiology
Fergus Falls State Junior College

Robert H. Sackett
Electronics Engineering Technology
Normandale State Junior College

Charles R. Samuelson
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Charles A. Sigmund
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Ed Verzal
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Robert D. Vincent
Physics, Mathematics
North Hennepin State Junior College

Marvin Vollom
Physics
Vermilion State Junior College

Rudolph Voxland
Industrial Education
Mesabi State Junior College

Ray Ward
Marketing, Management
Anoka-Ramsey State Junior College

Aaron Wenger
Physics
Rainy River State Junior College

Steven Wentworth
Natural Science, Physics
Brainerd State Junior College

Paul Whittaker
Chemistry
Rochester State Junior College

Harland H. Whitwell
Chemistry
Hibbing State Junior College

CONFERENCE STATISTICS

I.	Attendance	Private	Public	University	Total
	Conference I	6	61	4	71
	Conference II	5	55	6	66
	Conference III	5	60	4	69
	Total	16	176	14	206

II.	Institutions Represented	Conference I	II	III
	Private Junior Colleges			
	Bethany Lutheran	X	X	X
	Corbett College	X	X	--
	Golden Valley Lutheran	--	X	X
	St. Mary's Junior College	X	--	X

Public Junior Colleges

(All of the public junior colleges in operation in Minnesota in 1969 were represented at all three of the conferences with two exceptions in the case of one conference)

The list is as follows:

Anoka-Ramsey
Austin
Brainerd
Fergus Falls
Hibbing
Itasca
Lakewood
Mesabi
Metropolitan
Normandale
North Hennepin
Northland
Rainy River
Rochester
Vermilion
Wilmar
Worthington

Summary of Attendance by Institution

	Conference I	II	III
Private	3	3	3
Public	17	15	17

III Total Attendance, Six Conferences. 1968-1969 – 409

ACKNOWLEDGEMENTS

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